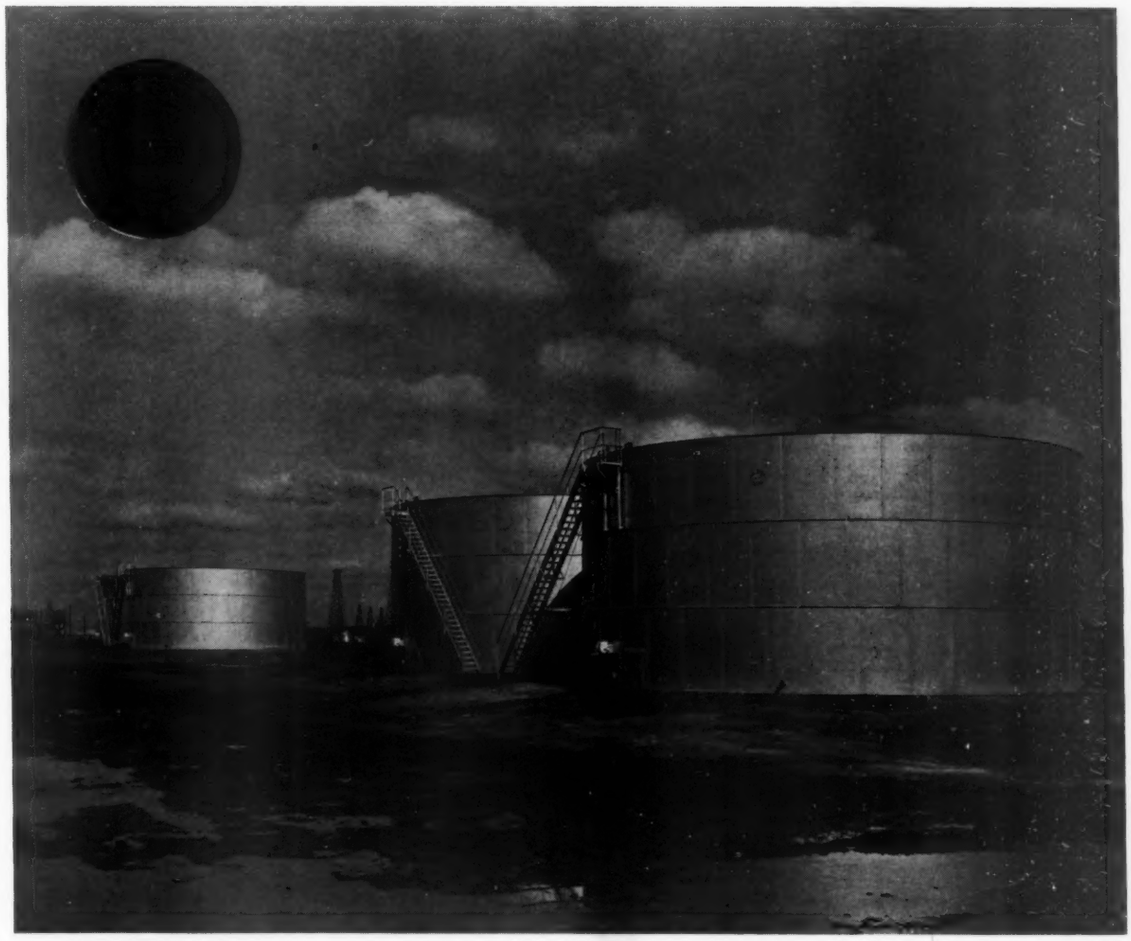
45

MAR 25 1938

the OIL AND GAS JOURNAL

ARCH 24
1938

PRICE
CENTS



Four 10,000-Bbl. Maloney Tanks, with Maloney Stairways, Superior Oil Co., Evangeline Field, La.

MALONEY 10,000-BBL. TANKS

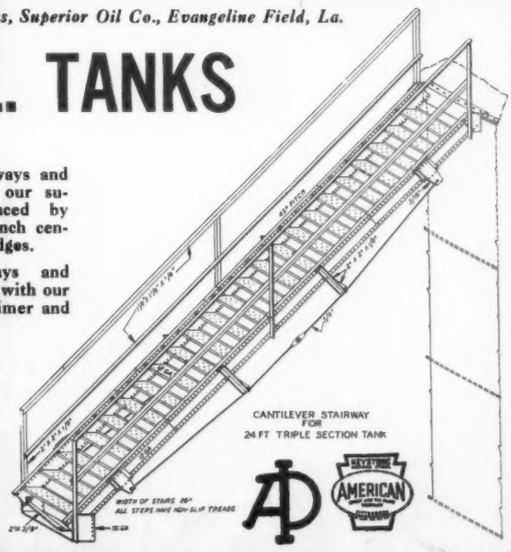
10,000-Bbl. bolted steel tanks, like those here shown, are the largest size tanks MALONEY makes. These tanks are accurately manufactured in accordance with A.P.I. Specifications.

Three rows of bolts are used in joining the lower ring of stays, two rows for second and top rings. Triple rows of bolts are used in the vertical and top seams of the flush-type clean-out plate, which is heavily reinforced on inside. This plate can be easily removed and replaced without getting inside of the tank, thus eliminating danger of gas accidents. The 3x3x¼ deck-rafters are of cantilever construction.

MALONEY Sectional Steel Stairways for these 24-foot-height tanks are also of cantilever construction, as shown in drawing. Treads of both Stairways and Platforms or Walkways have our superior non-skid tread produced by means of holes punched on 2-inch centers with upward protruding edges.

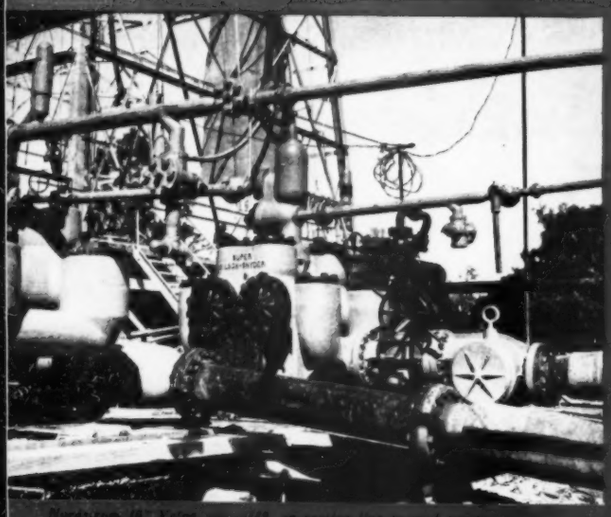
MALONEY Tanks, Stairways and Walkways are two-coat painted with our Red Chromated Iron Oxide Primer and our high-grade Aluminum Finish Coat; or they may be ordered with our extra-heavy "Double-hot-dip" galvanized coating, applied *after* fabrication.

Tanks 100 to 10,000-barrels capacity. Stairways and Walkways adapted to any field requirement. Adequate stocks at all principal petroleum points.

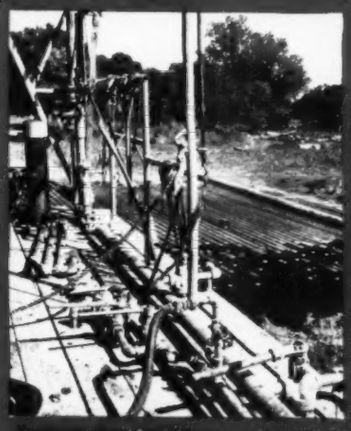


MALONEY TANK MFG. CO., 38 N. PEORIA, TULSA, OKLA.

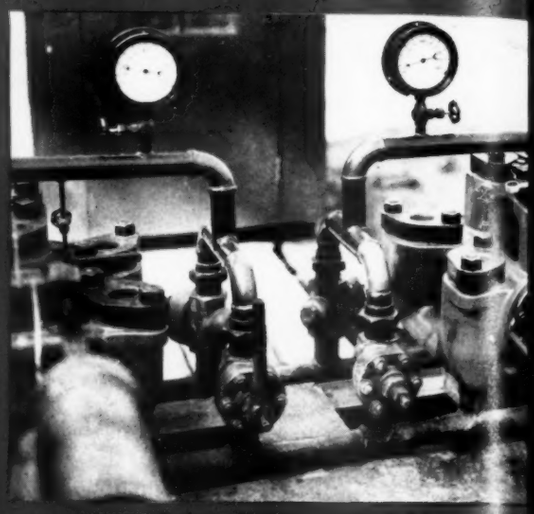
The Valves that identify good drilling practice



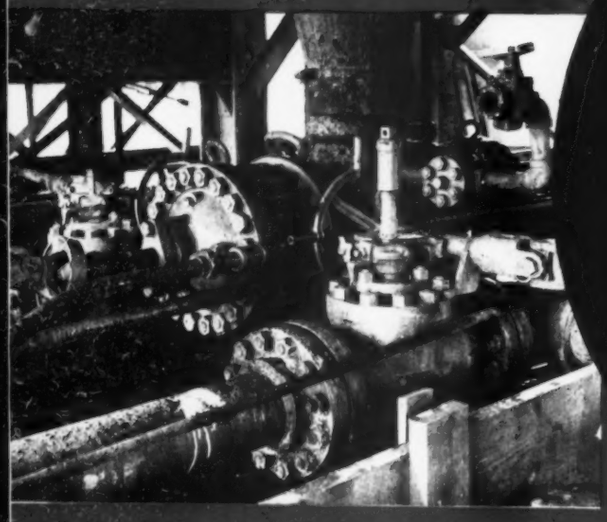
Nordstrom 10" Valves, 5,000 lb. test, on suction line to mud pumps. Also note Hypreseal Valves.



Nordstrom Hypreseal Valves on mud line hook-up showing stand-pipe and control lines to blowout preventer. 1½", 2" and 4" Hypresels.

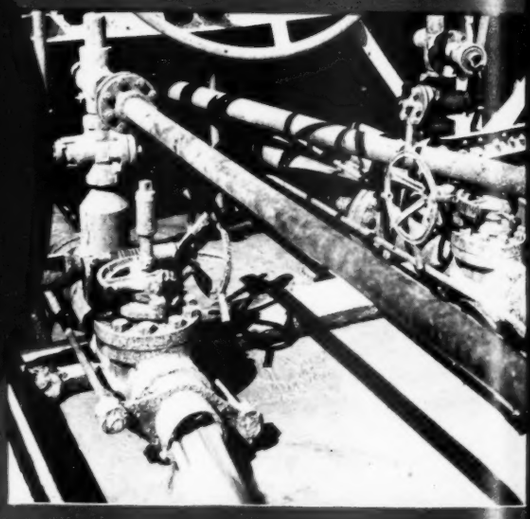


Nordstrom 2" Valves on rotary feed pump manifold.



Nordstrom 1" Valves 5,000 lb. test, equipped with knuckle joint with hand-wheel extension, on mud flow line to slush pit.

The Nordstrom Hypreseal Valve, with its impervious seal, controls high pressures on mud lines. Ask for literature.



Nordstrom 1" Valves with knuckle joint and extension on mud outlet line to pit. Also note Hypreseal Valves.

NORDSTROM LUBRICATED PLUG VALVES

PATENTED Sealdyne LUBRICATION

MERCO NORDSTROM VALVE CO.
A SUBSIDIARY OF PITTSBURGH EQUITABLE METER CO.
MAIN OFFICES: Pittsburgh, Pa. BRANCH OFFICES: New York City, Buffalo, Philadelphia, Columbia, Memphis, Des Moines, Chicago, Kansas City, Tulsa, Houston, Los Angeles, Oakland
CANADIAN REPRESENTATIVES AND LICENSEES: Pacaud Brothers, Ltd., University Tower Bldg., Montreal, Que.

The Oil and Gas Journal

PUBLISHED WEEKLY BY THE PETROLEUM PUBLISHING COMPANY AT TULSA, OKLAHOMA

P. C. LAUINGER, *President* — *Editor*, C. O. WILLSON

W. T. ANDERSON, *Managing Editor* — JAMES McINTYRE, *Consulting Editor*

W. T. ZIEGENHAIN, *Engineering Editor* — L. G. E. BIGNELL, *Prod. Engineering Editor*

C. K. FRANCIS, Ph. D., *Technical Editor* — W. L. NELSON, *Metallurgical Editor*

Associate Editors

T. F. SMILEY — D. H. STORMONT

DAL DALRYMPLE — T. P. SANDERS

PAUL REED

District Editors

Houston, *Sterling Bldg.*
NEIL WILLIAMS — F. L. SINGLETON

Fort Worth, *Petroleum Bldg.*
MITCHELL TUCKER

Shreveport, *City Bank Bldg.*
GEORGE WEBER

Los Angeles, *Union Oil Bldg.*
L. P. STOCKMAN

Washington, *Natl. Press Bldg.*
HENRY D. RALPH

Saginaw, *News Bldg.*
O. C. PRESSPRICH

Denver, *State Office Bldg.*
TOLBERT R. INGRAM

New York, *415 Lexington Ave.*
H. STANLEY NORMAN

Oil City, *Derrick Bldg.*
J. P. O'DONNELL

Toledo, *P. O. Box 98*
G. A. WHITNEY

Chatham, Ontario, *Box 136*
VICTOR LAURISTON

S. H. ROURKE, *Business Manager*

M. F. BALDWIN, *Circulation Manager*

Advertising

E. KLAPPENBACH, *Advertising Manager*

New York, *415 Lexington Ave.*
C. L. CAIN

Cleveland, *Leader Bldg.*
HOWARD MARKT

Chicago, *300 W. Adams St.*
C. R. FARMER

Tulsa, *114 W. 2nd St.*
KENNETH J. LANGLEY

Houston, *Sterling Bldg.*
WAYNE RIVES

Los Angeles, *1406 S. Grand Ave.*
J. HOWARD TINKHAM

Cologne, Germany—*1 Laudahnstrasse*
A. J. CHAMBERS

Table of Contents

Vol. 36, No. 45 — March 24, 1938

News Developments

Summary ... 9

Expropriation Policy of Mexico to Be Fought ... *H. Stanley Norman* 10

Search for Oil on Wider Front, With New Tools, Indicated at Geological Sessions ... *L. G. E. Bignell* 12

Sparks From the News ... 14

Trio of Big Gas Wells Enlivens Play Along Lerado Anticline ... *Dal Dalrymple* 15

Seismograph Work in Trinidad ... *T. F. Smiley* 16

Compromise in Wilmington But Situation Still Grave ... *L. P. Stockman* 18

Editorial—More Important ... 19

Newest South Arkansas Lime Getting Widespread Attention ... *George Weber* 20

Deeper Drilling in Torrance Field ... *James A. Bermingham, Jr.* 21

Antitrust Activities Not to Be Increased ... *Henry D. Ralph* 25

Pipe Line Activity ... 26

Natural Gas News ... 26

Refinery Projects ... 27

Natural Gasoline ... 27

Bureau Forecast 2 Per Cent Higher Than Year Ago ... 28

Obituaries ... 28

News From Foreign Lands ... 30

January Report Shows Decline in Fuel Demand ... 72

Bureau of Mines Report ... 74

Engineering—Operating

Unusual Features Included in New Billings Field Natural Gasoline Plant ... *D. H. Stormont* 32

Operating Ideas ... 37

Oil Burner Laboratory Operated by Standard of Indiana ... *F. K. Ovitz and J. G. Nellis* 39

Necessity for Uniform Spacing of Wells and Ratable Production ... *A. M. Crowell* 42

Questions on Technology ... *C. K. Francis, Ph.D.* 53

Problems From Readers ... *L. G. E. Bignell* 54

Field Operations

Field Operations Summarized ... 57

Gulf Coast ... *Neil Williams* 58

Kansas ... *Dal Dalrymple* 61

California ... *L. P. Stockman* 63

Southwest Texas ... *F. L. Singleton* 66

Michigan ... *Otto C. Pressprich* 68

Louisiana and Arkansas *George Weber* 70

Central West ... 76

North and East Texas ... *Mitchell Tucker* 79

Eastern Fields ... *Staff Correspondent* 80

Rocky Mountain Area ... *T. R. Ingram* 82

Oklahoma ... *Dal Dalrymple* 88

West and Central Texas and Panhandle ... *Mitchell Tucker* 93

Canada ... *Victor Lauriston* 98

Wildcat Operations ... 99

Markets and Prices

Group 3 Market ... *T. F. Smiley* 110

A.P.I. Refinery Report ... 111

New York Market ... *H. Stanley Norman* 111

Tank-Wagon Markets ... 112

Refinery Prices ... 113

Crude Prices ... 65-114

Additional Features

New York-Pennsylvania Gas Fields ... 62

Oil Man's Calendar ... 106

Personal Paragraphs ... 108

Record of Oil Securities ... 115

New and Improved Equipment ... 116

Classified Advertising ... 118

Advertisers Index ... 120

SUBSCRIPTIONS: United States, 1 year, $6.00; 6 months, $3.00. Elsewhere, 1 year, $7.00; 6 months, $3.50. SINGLE COPIES: 20 cents. Price of any back copy more than 1 year old is 50 cents.

Copyright, 1938, by The Petroleum Publishing Company

Direction, protection

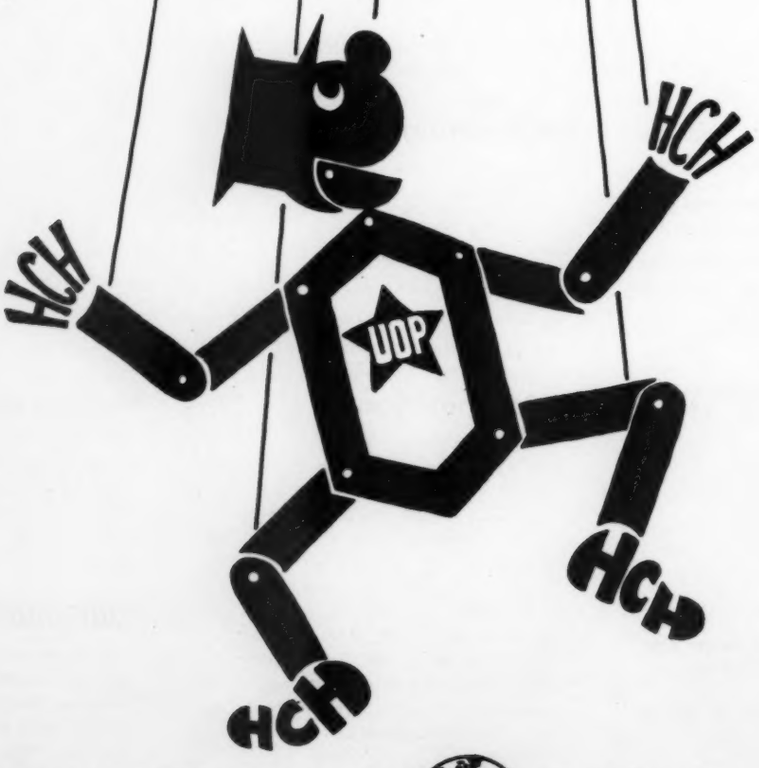
The Chemical Cop is no puppet—neither is the Chemical Sergeant—but they need direction and control and protection They get it from the organization behind them—Universal

Before the chemical police start on their anti-gumbug campaign in your gasoline, Universal specialists are on the job

They study the treating and sweetening systems They correct them when necessary to knock out chemical enemies before they knock out the cops

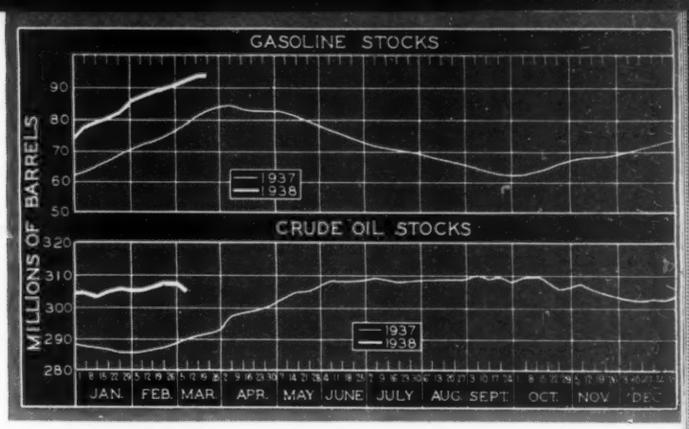
The U. O. P. chemical police will keep the gum all out of your gasoline

—and at trifling cost



Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor



Some Gain Evident in Gasoline

THE oil business as another month draws to a close presents again a mixed picture. On the favorable side is the fact that the Mid-Continent gasoline market, which over a period of time reflects conditions for the entire area east of California, is showing improvement. The desire on the part of buyers to take deliveries before the higher freight rates become effective on March 28 may be a factor in this situation, which has brought slightly higher tankcar quotations, but competent observers incline to the belief that sustained gains in motor fuel markets are possible, provided operators will maintain reduced operations through April.

CRUDE PRODUCTION *3,429,572 barrels daily average—up 49,371 barrels.*

CRUDE STOCKS *304,527,000 barrels as of March 5—down 640,000 barrels.*

GASOLINE STOCKS *93,192,000 barrels as of March 5—up 108,000 barrels.*

REFINERY RUNS *3,080,000 barrels daily week ending March 5—down 20,000.*

In the crude oil division operators are encouraged by the fact that restricted operations have practically ended additions to crude stocks for the country as a whole over the past several weeks. Certain states and areas are not doing their share in bringing about a healthier statistical situation for the entire industry and for that reason many observers are inclined to discount the obviously favorable factors.

In contrast to the situation all of last year and early this year, California at this time has the most difficult problem of the entire industry to work out. Of the total gain of 49,371 barrels daily in the nation's crude production last week, 32,000 barrels is accounted for by California. Its daily average crude output last week was the highest in eight years.

This large production of the West Coast state is not being absorbed currently in its domestic and export markets. For the month ending March 5, 944,000 barrels of crude oil was added to storage and according to A.P.I. reports for the month ending March 12, 5,812,000 barrels of fuel oil and gas oil and 707,000 barrels of gasoline were run to storage. This means that the month's storage increases averaged 248,000 barrels daily, a gain approximately equal to one-third of the state's crude oil production during that period.

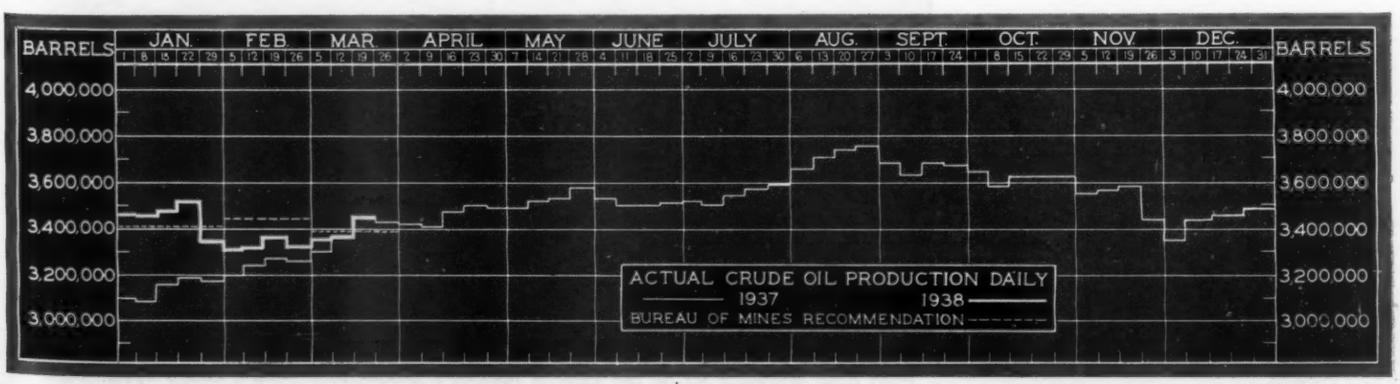
The decline in the export and domestic demand for all grades of fuel is the most serious angle of the California situation. The domestic demand has suffered due to industrial conditions and higher temperatures than the average over the past four months which restricted the consumption of all fuels. Export shipments of fuel oil and gas oil from the western shipping points so far this year have been about half what they were last year.

The Central Committee of California operators has been working with this problem for weeks and the proposed reduction in the output of Wilmington field should result in a lower average crude output for the state.

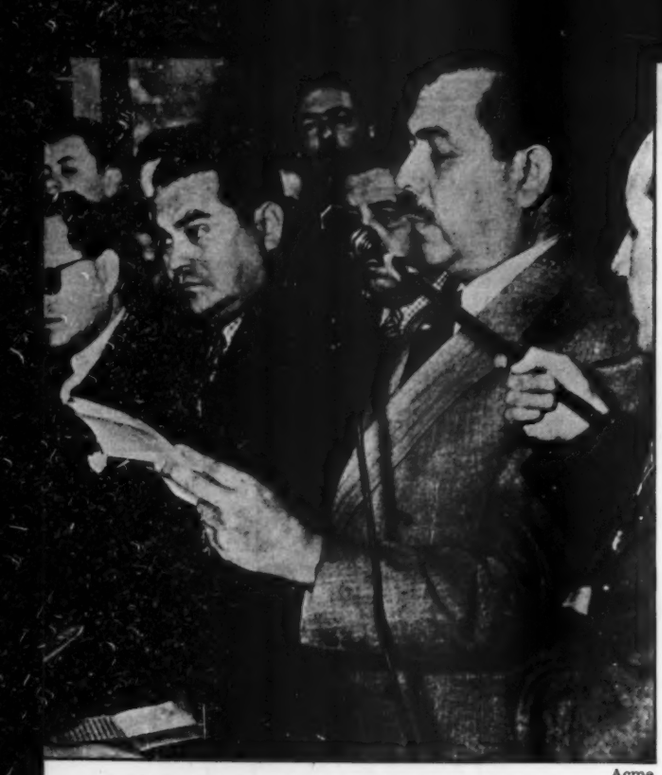
Daily Average Production for Week

	Mar. 19 1938	Bur. Mines Mar. est.	Mar. state allowables	Mar. 12 1938
Oklahoma City	125,100	.....	.....	129,150
Fitts	60,825	.....	.....	59,100
Remainder of state	333,100	.....	.....	338,225
Total	519,025	547,700	475,000	526,475
East Texas	428,450	.....	.....	427,750
West Texas	187,298	.....	.....	186,497
North Central Texas	97,650	.....	.....	94,598
Texas Panhandle	72,900	.....	.....	58,000
East Central Texas	98,649	.....	.....	97,800
Gulf Coast Texas	322,902	.....	.....	321,506
Southwest Texas	104,900	.....	.....	104,348
Total Texas	1,312,749	1,344,900	1,300,506	1,290,499
North Louisiana	78,170	.....	.....	78,790
Gulf Coast Louisiana	182,250	.....	.....	177,000
Total Louisiana	260,420	239,400	246,755	255,790
California	757,250	694,600	694,600	725,250
Kansas	172,050	176,700	169,528	173,100
Arkansas	49,130	38,200	.....	48,930
Eastern fields	138,100	129,200	.....	139,500
Michigan	52,968	51,600	.....	53,477
New Mexico	104,980	105,100	105,100	105,090
Rocky Mountain area	62,900	64,200	.....	62,090
Total United States	3,429,572	3,391,600	.....	3,380,201

Increase, 49,371 bbls. daily.



Expropriation Mexico to Be



Acme

President Cardenas, surrounded by labor leaders, broadcasts blast at oil companies

By H. STANLEY NORMAN

The bitter, protracted struggle between private oil companies and labor organizations in Mexico reached a climax March 18 when President Lazaro Cardenas resorted to the drastic expropriation law in seizing all petroleum properties of American and British concerns.

Control of 17 United States and British companies, representing an investment of $450,000,000, was assumed by 18,000 Mexican oil workers who were under instructions to reduce personnel by 50 per cent and to contribute 25 per cent of the wages of those retained to indemnify their idle comrades.

A brief in protest was filed with the state department at Washington, March 22, jointly by Huasteca Petroleum Co., Standard Oil Co. of California, Mexican Sinclair Petroleum Corp., and Penn Mex Fuel Co. It was entitled in support of "a claim of manifest denial of justice" and was referred to the legal division of the department. There was no indication what action it requested or what would be taken by the department.

Ambassador Daniels informed the state department that Edward Borrego, an official of Standard Oil Co. at Tampico, is not being detained forcibly by the syndicates but is staying at the terminal building for two or three days as he fears if he leaves he will not be allowed to return. His Mexican assistant can come and go freely. The cable stated exaggerated accounts of his difficulties are due to the fact oil companies are permitted no direct telephone communication with the terminal building.

Secretary Hull's Statement

Secretary of State Hull said:

"Because of our serious concern about the possibilities inherent in the developments in the oil situation in Mexico I had a lengthy conversation with Ambassador Daniels acquainting him with all phases of the attitude and the feelings of this government in the hope that some adjustment of the differences existing down there may be worked out on a basis of equal fairness to all concerned before a stage too highly acute and too highly complicated might be reached. I may add further that for some days I have had on my desk the Mexican law relating to expropriation and all the phases of the procedure. Naturally we had hoped that the other and more usual course would be first adopted, the course equivalent to receivership in this country, but it was not."

Orders to the Mexican workers to take charge of the oil properties were issued from Central Union headquarters after the labor board had cancelled the existing contract with oil companies on the ground the companies had not complied with the supreme court decision under which the companies were instructed to pay immediately 41,000,000 pesos in compensation and wages, which company executives say they are absolutely unable to do.

As an eleventh hour gesture to avert expropriation proceedings, the companies agreed to pay 26,000,000 pesos annually in increased wages if clauses of the supreme court decision relating to labor's participation in administration were withdrawn. The offer was reported refused by President Cardenas with the remark, "It is too late now."

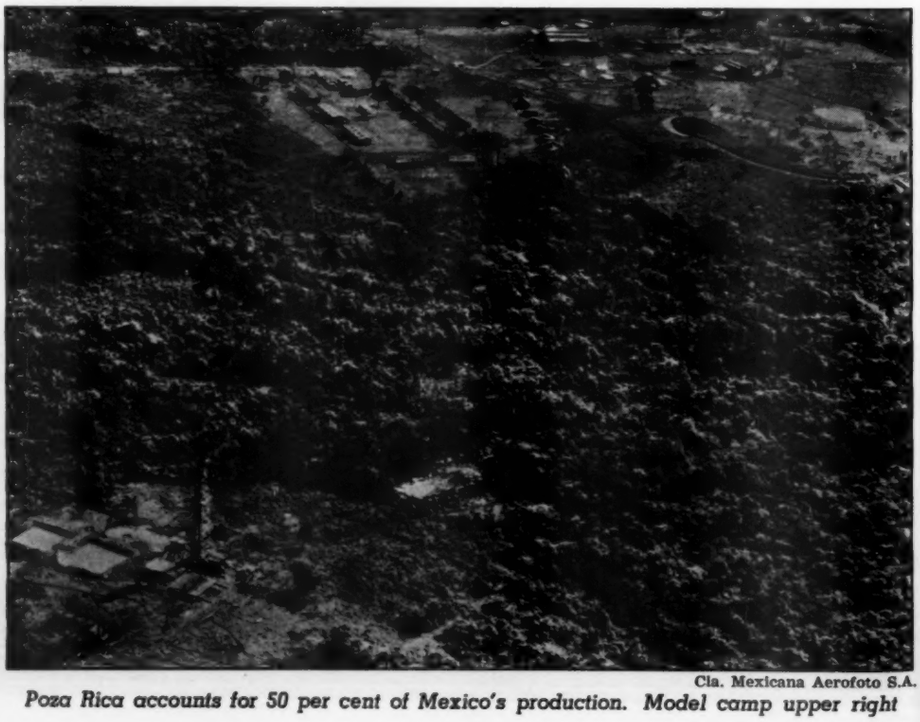
President Cardenas attempted to justify his action in a radio address over a national hook-up. He accused the companies of carrying on a campaign of propaganda and asserted the government would be in grave danger if the foreign concerns were permitted to refuse to comply with "the laws of the nation." The expropriation law was employed, President Cardenas said, because a mere embargo probably would have resulted in methods by the management which would impede production. Simultaneously with the expropriation decree, the Central Bank of Mexico suspended dealings in foreign currency and President Cardenas indicated devaluation of the peso was under official consideration.

Asserting that the government had taken "all desirable steps in order that the constructive activities of the republic not be lessened," President Cardenas said:

"Nevertheless, if it becomes necessary, we shall sacrifice all the constructive activities, which this period of government has undertaken, to meet the economic compromises that application of the expropriation law to interests so vast demand of us. And although the subsoil of the country itself will give us abundant economic resources to settle the obligation of indemnification we have contracted, we must accept that our individual economy also suffers inevitable readjustments to the point, if the Bank of Mexico deems necessary, of modification of the present rate of exchange of our money, so that the entire country may count with the currency and other elements to consolidate this act of essential and profound economic liberation of Mexico."

President Cardenas' reference to indemnification indicated Mexican authorities had given consideration to this essential phase of expropriation, but no hint was given as to what basis might be adopted. It is roughtly estimated the American interests in Mexico represent capital investment of around $200,000,000 and that of the British concern, Mexican Eagle Oil Co., about $250,000,000. Mexico produced about 46,000,000 bbls. of crude oil in 1937 and internal consumption totaled about 20,000,000 bbls., leaving the remainder available for world markets.

W. S. Farish, president of Standard Oil Co. (New Jersey), said in New York he was still



Cia. Mexicana Aerofoto S.A.

Poza Rica accounts for 50 per cent of Mexico's production. Model camp upper right

Policy of Fought

hopeful the Mexican authorities would permit restoration of normal activities before the economic consequences begin to hurt the Mexican nation.

Farish's Statement

"On March 1," said Mr. Farish, "the supreme court of justice in Mexico handed down a decision denying an injunction asked by the American and British oil companies to forestall seizure of their properties. Today, word was received that because of the failure of the companies to comply with the terms of the labor board award against which the stay was asked, the Mexican government had taken physical possession of the American and British owned properties through the procedure of expropriation.

"It is not necessary again to go into the history of the long struggle which has been carried on by the petroleum companies in the effort to reach an amicable agreement with the government in respect to exorbitant demands made in the name of the workers. Two of these conditions were manifestly impossible of acceptance. One would have essentially removed from the management all control of operations and personnel. The other would have increased costs by approximately 41,000,000 pesos per annum, which is nearly twice the earnings the industry has averaged over the past three years. This despite the established fact that Mexican petroleum workers have long been a favored class, receiving roughly twice the wages paid for comparable labor outside the petroleum industry.

Disparity in Wages

"Under the award, this disparity would have become approximately three times the prevailing wage scale elsewhere in Mexico. The oil companies see no chance to make up any of this increased cost of production and manufacture, since the Mexican government has hitherto arbitrarily fixed a very low price at which products must be sold throughout the Republic of Mexico and has given no indications of departing from this policy in the future. In a final effort to adjust the situation, at the suggestion of the U. S. State Department and at the invitation of the Mexican government, the companies sent a representative to Mexico City empowered to discuss any concession within reason. His last offer was rejected.

"The oil companies made an earnest effort to secure a fair hearing before the supreme court, and as a guaranty of their good faith put up a bond of 3,000,000 pesos. Nevertheless, Lombardo Toledano, the radical labor leader, confidently announced eight days in advance of its delivery, the decision of the supreme court. President Cardenas himself confirmed Toledano's prediction six days before the court pronounced its decision. And Supreme Court Justice Icaza, on the day of the decision, frankly said in open session of the Mexican supreme court that a verdict against the companies was a political convenience.

"I feel it necessary to clear up one misapprehension which has been given wide currency by the Mexican authorities. That is that the foreign oil companies have long been trying to withdraw from operations in Mexico and that in consequence the government had to step in to take over the business. Nothing could be farther from the truth. We have made every effort to deal fairly with our labor and with the government. We are ready to undertake further development of Mexico's oil resources as soon as we have reasonable assurance that the required investment will be accorded freedom from the crippling governmental restrictions and labor troubles which have been the order of the day over the past several years. Collectively we have already an investment in the Mexican petroleum industry of $450,000,000. We are not disposed to stand idly by and see that capital confiscated.

"The administrator who takes over the properties can no more operate them at a profit under the extreme conditions laid down for the companies than could the owners. Nor can he successfully surrender administrative control of operations to workmen inexperienced in business management. This is recognized in Mexico. The Mexican press reports that the oil workers now in possession have decided as a first step to reduce the personnel by 50 per cent and to withhold 25 per cent of the wages of those retained to indemnify their comrades.

"I sincerely hope that before the economic consequences of this begin to hurt the Mexican nation the authorities will realize the injustice of their position and permit us to restore normal activities on the terms offered, which were fair to all interests concerned."

Potential Oil Area

At the end of 1937, it was estimated that potential oil area in Mexico consisted of 18,698,094 acres of which 247,100 acres had been exploited. The richest field in Mexico is the Poza Rica area in which the British owned Mexican Eagle "El Aguila" was the chief private owner. The company entered an agreement last year with the government owned General National Administration of Petroleum calling for unit operation of the properties. The government also was to participate in about 100 wells drilled by Mexican Eagle to the extent of around 35 per cent.

Precautions were taken against sabotage and foreign workers with their families were being assembled or moved to points of safety in the event of rioting. With all petroleum workers halting activity, wild excitement prevailed in Tampico, Minatitlan and other refinery centers. Troops were moved in by the government to maintain order.

The Shell-managed Mexican Eagle company, which produces about 62 per cent of the oil in Mexico, was rushing women and children from oil camps to petroleum centers. A boat leaving Puerto Mexico over the week-end carried many British and American workers to New Orleans.

The dispossessed oil companies planned to make another appeal through the Mexican courts. An injunction will be sought in a district court to restrain the government from carrying out its expropriation decree. Failing in the injunction maneuver, the companies will attack constitutionality of the expropriation law in the Mexican supreme court. None of the companies was optimistic over the possibility of favorable court action.

Sinclair's Statement

Harry F. Sinclair, chairman of Consolidated Oil Corp., which controls refining and producing properties in Mexico through subsidiaries, blamed the series of events leading up to the expropriation decree on a group of labor politicians. He said American employes, some of whom have lived in Mexico for years, have been ordered out of their homes and threatened with violence; that "all access to our offices and properties is blocked by bands of workers," and that "mob action, rather than legal proceedings, characterizes the whole business."

Mr. Sinclair declared that, while the trouble

(Continued on Page 22)

Oil in Mexico

Value of oil properties, $450,000,000. Present crude oil production 130,000 barrels daily with approximately 50 per cent coming from Poza Rica field in Papantla region. This field is one of the largest single oil reserves in the entire world. Drilling inactive with wells being completed at the rate of 4 or 5 monthly. Oil pipe lines total 17,500 miles and natural gas 500 miles.

Three principal operating companies are:

Compania Mexicana De Petroleo "El Aguila" (Mexican Eagle), a Shell unit which has about 55 per cent of the crude oil production with three refineries: Tampico, 50,000-barrel daily capacity; Minatitlan, 33,000 barrels; Mexico City, 12,000 barrels.

Huasteca Petroleum Co. and other Standard of New Jersey units are second largest producers. Huasteca company has a 20,000-barrel refinery at Tampico.

Pierce Oil Co. S.A., controlled by Consolidated Oil Corp. (Sinclair), has important crude oil production with a 12,000-barrel refinery at Tampico.

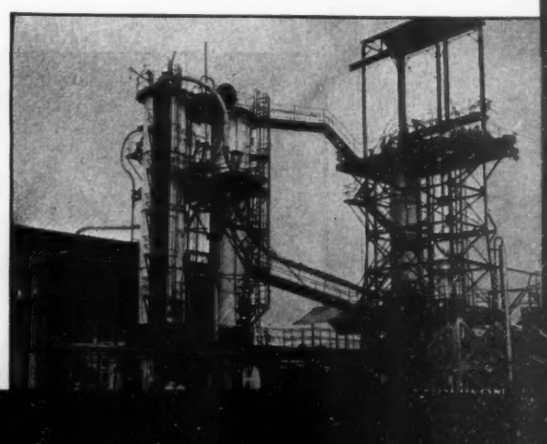
Gulf Oil Corp., Standard Oil Co. of California and several other American companies have smaller producing interests.

The five refineries are modern in equipment and the three owners refine complete lines of the principal refinery products. In addition there are three small skimming plants. All the refineries absorb approximately 90 per cent of the crude output.

Mexico now consumes about 40 per cent of its petroleum output. This includes approximately 9,000 barrels daily of gasoline, a substantial part of which is purchased by American tourists.

Exports consisting of a large percentage of heavy oils go largely to Great Britain, Canada and South American buyers.

Unit of "El Aguila" Co. at Minatitlan, Isthmus zone, Mexico

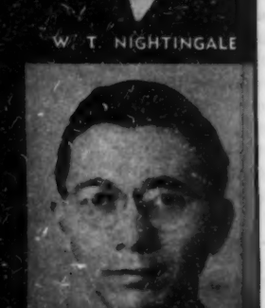


GORDON I. ATWATER

GEORGE S. BUCHANAN

DR. J. BRIAN EBY

W. T. NIGHTINGALE



ADDISON YOUNG

Search for Oil on Wider F

Indicated at Meetings o

By L. G. E. BIGNELL

NEW ORLEANS, Mar. 19.—The search for new oil in 1938 will take place on a broader front than ever before, aided by new tools and more fundamental information.

This fact was apparent this week as petroleum geologists and those representing closely allied professions discussed the latest developments and discoveries at the annual meetings of the American Association of Petroleum Geologists and Society of Exploration Geophysicists. More than 1,600 from all parts of the oil country registered at the meetings including a large number from points outside this country. Registrations included 600 women.

Reports made during the sessions of the A.A.P.G. showed that new areas were being explored as to their oil possibilities and at the same time some of the oldest producing fields were being resurveyed to determine whether new producing horizons might not be discovered. The reports showed the increasing importance of all branches of geology in the efforts to find more oil with the exploratory drill aiding the geologist and geophysicist in the accumulation of subsurface data needed to discover the pools of the future, which will be more difficult to find than in the past.

Dr. Joseph E. Pogue, vice president of Chase National Bank, New York, presented a paper on "The Economic Aspects of Drilling" (The Oil and Gas Journal, March 17, page 42, Figure 3 showed well completions in the United States and estimate derived from related statistical series by years 1915-1937). Doctor Pogue pointed out that a great many unnecessary wells have been drilled and are being drilled and as a consequence the allowable fixed by the several state regulatory bodies has limited the well's production to such a small volume of oil the returns upon the investment are no longer as attractive as formerly.

Need for Discoveries

Doctor Pogue recognizes the need for drilling new wells for the discovery of new reserves and joins with Dr. Frederic H. Lahee, who also presented a paper during the Wednesday morning technical program on "Wildcat Drilling in 1937" (The Oil and Gas Journal, March 17, Page 41), recommending that money now spent for providing new means for producing oil not actually needed at this time, might better be utilized in drilling exploratory wells in unproven territory in the search for stratigraphic information. From these data the geologist and paleontologist can work out regional conditions that should in time indicate where new reserves may be found. In other words, these authorities feel the industry can continue to spend money seeking new oil but after the oil has been found, should recognize the conservation rules and regulations in producing it and limit the invested capital for production purposes to the minimum in order that the return upon investments may be made in shorter time.

This general thought was voiced by many other members of the geological profession who presented papers before the technical sessions. New means and methods are constantly being devised to make the location and development of gas and oil fields more certain and less costly. A vast fund of technical information was contained in the more than 125 papers presented before the sessions of the A.A.P.G. and Society of Economic Geophysicists and abstracts of most of them were published in the March 17 issue of The Oil and Gas Journal.

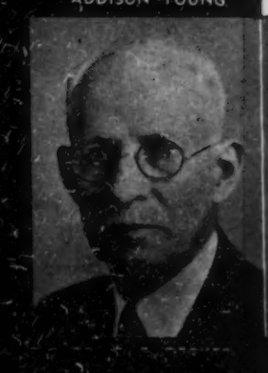
Finding New Structures

Doctor Eugene E. Rosaire, Houston, Tex., presented an outstanding paper dealing with new developments in the search for

A.A.P.G.—Donald C. Barton, Houston, president; Harold W. Hoots, Los Angeles, vice president, seated; Ira H. Cram, Tulsa, secretary-treasurer; W. A. Ver Wiebe, Wichita, Kans., editor; and H. B. Fuqua, Fort Worth, retiring president

structure favorable for accumulation of gas and oil. It was read before the Society of Economic Geophysicists Tuesday. Doctor Rosaire outlined a method now in use in this country and abroad by which it is possible to detect the presence of hydrocarbons in surface soil by examination of samples secured at relatively shallow depths in the earth's crust.

The germ of the idea occurred to Doctor Rosaire after the World War when he, as a chemist, had a great deal to do with the development of gas masks. The principle of the gas mask is to absorb the poisonous gases upon the charcoal or other substances placed in the chamber of the mask through which all air and gas must pass to the wearer's lungs. The particles making up the soil perform much the same function as the charcoal in the mask, in that they will absorb hydrocarbons escaping upward from deeply buried gas and oil pools. By this method of correlation of the hydrocarbon content of the various samples selected from an area



DUNFORD KELLY

HAL P. RYBEE

MAX DAVID

H. M. EVJEN

Front, With New Tools, of Geological Societies

it is possible to make maps showing anomalies or structure contours and in this manner the position of new structures containing gas or oil may be located. Doctor Rosaire predicts this method of exploration has future possibilities of great importance.

In considering the development of land for gas and oil production it is always necessary to take into consideration the attitude of the owners of the land or owners of royalty. George A. Wilson, professor in the College of Law, Tulane University, New Orleans, in his paper entitled "Role of the Petroleum Geologist in the Development of the Law of Oil and Gas," pointed out the geological profession has done much to enlighten the public in regard to the true subsurface conditions under which gas and oil have been accumulated. The old idea that oil existed in pools and flowed in streams underground has been dissipated and the public has come to realize that gas and oil really are trapped in finely divided pores in sand or limestone and under natural conditions the whole reservoir is subject to common mechanical and geophysical laws. After the reservoir is tapped by the drill the original conditions are disturbed and it is necessary to apply man-made laws to regulate the distribution of the gas and oil equally to owners of surface rights. By making these concepts of gas and oil accumulations clear to the public the geologists, along with the petroleum engineers, have done much to aid in the formulation of new ideas of rights of surface owners and it is predicted that in time the old law of capture will be entirely disregarded and the owners of surface rights will be concerned equally with the owner of the leases in the production of the gas and oil in such manner as to return maximum profits to all interested.

This concept may enable the industry to explore for gas and oil in place without being compelled to reduce it immediately to surface possession. When such conditions are truly understood the industry will be able to employ the aid of the geological profession unstintedly in seeking for new reserves.

S.E.G.—F. M. Kannenstine, seated, Houston, elected president of the Society of Exploration Geophysicists; H. B. Peacock, Houston, secretary-treasurer; M. M. Slotnick, Houston; and W. T. Born, Tulsa, vice president

Thompson's Tribute

Col. Ernest O. Thompson, chairman of the Interstate Oil Compact Commission, and member of the Texas Railroad Commission, paid high tribute to the petroleum geologist in his address. He said in part:

"As soon as our geologists and engineers could demonstrate the facts that scientific production practices led to a greater recovery of oil, proration orders found a sound basis in law, and the conservation program began to make headway. Today it is an established institution, encouraging efficient methods of recovering our petroleum resources, and saving millions of barrels of oil.

"The conservation movement is not static. Engineering and geological science are young, growing, and exceedingly adaptable. New techniques and processes will be developed to meet new conditions, and operating through the medium of the conservation movement, the geologist and the engineer are destined to devise still more ways of getting the greatest ultimate benefit out of our petroleum resources."

Other Branches

Along with the A.A.P.G. the division of Paleontologists and Mineralogists held its twelfth annual meeting and the Society of Exploration Geophysicists its ninth annual session. All of the meetings were well attended and much progress was made in disseminating newly learned facts about the various phases of the geological science to the specialists in each group.

New Officers

New officers of the American Association of Petroleum Geologists are:

Dr. Donald C. Barton, Humble Oil & Refining Co., Houston, president; Harold W. Hoots, Richfield Oil Corp., Los Angeles, Calif., vice president; Ira H. Cram, Pure Oil Co., Tulsa, secretary-treasurer, and Dr. W. A. Ver Wiebe, University of Wichita, Wichita, Kans., editor.

New officers of the Society of Economic Paleontologists and Mineralogists are:

Dr. E. H. Sellards, University of Texas, Austin, Tex., president; Dr. Paul P. Goudkoff, Los Angeles, Calif., vice president; and Dr. Henry V. Howe, University of Louisiana, Baton Rouge, La., secretary-treasurer.

New officers of the Society of Exploration Geophysicists are:

F. M. Kannestine, Houston, Tex., president; W. T. Born, Tulsa, vice president; H. B. Peacock, Houston, secretary-treasurer, and M. M. Slotnick, Houston, editor.

RAYMOND T. CLOUD

CURTIS H. JOHNSON

DANIEL SILVERMAN

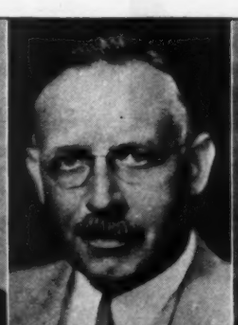
GEORGE A. WILSON

GEO. C. McGHEE

REED LAWLOR

SIBYL M. ROCK

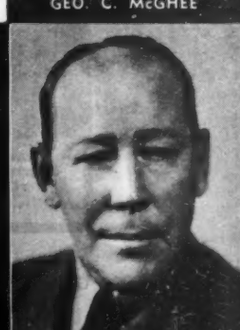
HUGH M. FLEY



F. R. ECKHARDT

LON R. TURK

W. W. WEST



ANDERSON

SPARKS FROM THE NEWS

DISCRIMINATION

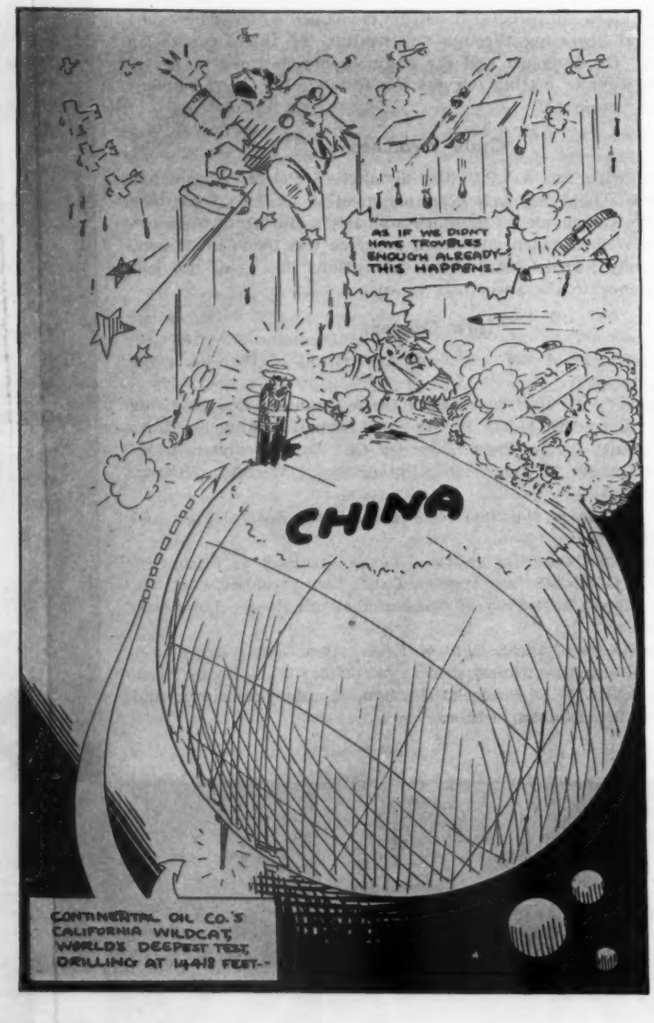
Annual report of major company shows petroleum industry has 4½ per cent of nation's taxable wealth and pays 11 per cent of its tax bills. The tax bill has doubled since 1931.

DOWN ON THE FARM

Tractor fuels, made to definite specifications, have become an important element in the refinery market. In the recent past "tractor fuel" wasn't even in the oil language.

PAYING THE FIDDLER

Too heavy runs late last year and early this year mean that refiners must keep operations under last year's levels.


AS IF WE DIDN'T HAVE TROUBLES ENOUGH ALREADY- THIS HAPPENS-
CHINA
CONTINENTAL OIL CO.'S CALIFORNIA WILDCAT, WORLD'S DEEPEST TEST, DRILLING AT 14418 FEET--

NO APOLOGIES

Two thousand petroleum geologists attending annual meetings in New Orleans this week reflects important changes in the industry's operations. It was not long ago that the head of a major producing company apologized for having one of them on his payroll.

AT LONG LAST

The shutting down of the Mid-Continent area's largest lubricating plant for the first time in 20 years indicates that the industry finally is learning how to end overproduction.

FAIR PROPOSITION

An Oklahoma refiner tells his customers that they must either pay break-even prices or his plant will be shut down. His customers, realizing that they have as much at stake as he, are paying the prices.

CONSISTENCY AGAIN?

First act of Mexican labor officials seizing oil properties was to reduce operating personnel 50 per cent. These same officials claimed that private operators were unfair to labor.

KANSAS GASSERS

Recent completion of three big gas wells, plus early expiration of leases, may lead to intensive exploration along the Lerado anticline in Pratt and Kingman counties, Kansas.

RIGHT DIRECTION

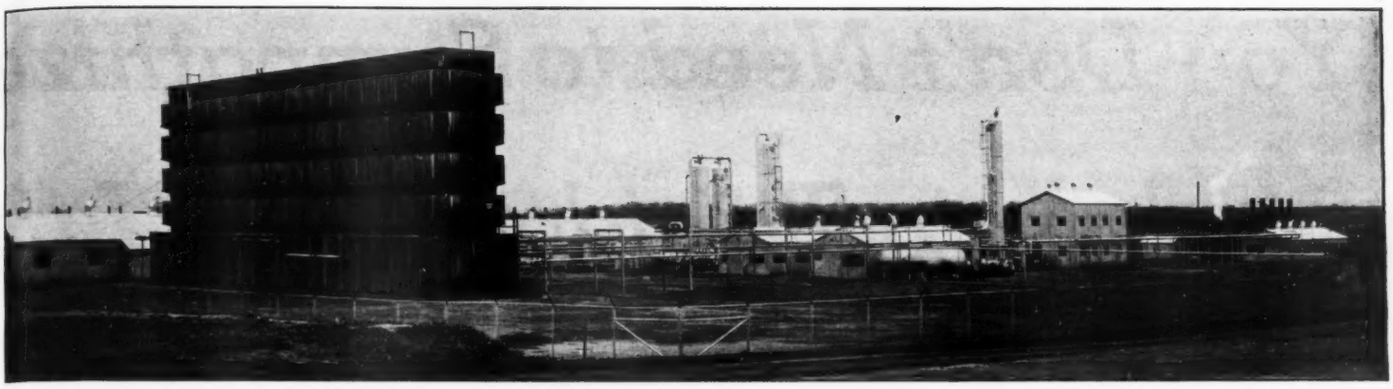
While nothing to shout about yet, the gasoline price trends in the Mid-Continent are in the right direction for the first time in several months.

OPEN ROAD

Early reports from tourist bureaus point to record week-end and vacation gasoline consumption for the spring and summer months.

SIX FREAKS

When a gusher was completed in the Music Mountain pool of the Bradford area several months ago, observers said it was a freak. There are now five more freaks.



Skelly gasoline plant in the Cunningham pool, Kingman County, Kansas

Trio of Big Gas Wells Enliven Play Along Lerado Anticline

By DAL DALRYMPLE

The recent completion of two Kansas wells that had initial production of more than 68,000,000 feet of gas each has attracted attention to the Cunningham pool, straddling the Kingman-Pratt County line, and that two-county area seems destined for extensive oil and gas exploration in the next year or two. A late wildcat strike along the trend between the two big gassers intensified interest in the district.

The newest producer, one of the larger gas wells in Kansas, was completed two weeks ago. It was Skelly Oil Co. No. 2 Conley, section 20-27-10w, which extended the Cunningham oil and gas pool one-fourth mile northeast in Kingman County. In Viola lime at 3,926 feet, total depth 3,950 feet, it produced 68,688,805 feet of gas daily.

The other big gasser, Skelly Oil Co. No. 1 Lunt, C NW section 18-28-11w, was completed about the middle of January to extend the Cairo, or Gilchrist gas pool of Pratt County one-half mile southwest. It produced 68,100,000 feet of gas from Viola lime at 4,278 feet, total depth 4,338 feet.

A 1938 Discovery

A new area almost midway between those two outposts was opened early in January at Skelly Oil Co. and associates No. 1 Adams, SE NW NE section 2-28-11w, wildcat in eastern Pratt County. It found Viola lime pay at 4,177-4,200 feet, drilled to 4,300 feet and plugged back to 4,200 feet to complete. Initial production was 43,485,000 feet of gas daily, with rock pressure of 1,325 pounds. This test, based on core-drill information, proved the trend between the Cunningham and Gilchrist areas, a distance of about 6 miles.

These pools are along the Lerado anticline, a trend from the Central Kansas Uplift running from northeast to southwest across parts of Reno, Kingman and Pratt counties.

The Abbyville pool in central Reno County is thought to be near the northeastern terminus of the Lerado anticline. It was opened in January, 1927, and has oil and gas production from Lansing-Kansas City lime at around 3,540 feet, with some gas from Admire formation at about 2,200 feet. Arbuckle lime, found at around 4,250 feet, is dry in that area.

The next pool along the anticline to the southwest is the Lerado field, in southwestern Reno County, about 4 miles north of the Kingman County line. It was opened by Shell Petroleum Corp. late in 1935, with production from Viola lime at 4,125-50 feet. Several big oil producers have been completed in this pool. Pay found in Kansas City lime was passed up for the deeper production.

One-Company Pool

The Cunningham pool, principally in northwest Kingman County, is the third pool to the southwest along the Lerado trend. It was opened by Skelly Oil Co. early in 1931, and is solely owned by that company. It was discovered by core-drill and is on a faulted anticline. Production is from Admire formation at 2,130 feet; Lansing-Kansas City lime at 3,400 feet; Viola lime at 3,925-4,000 feet, and Arbuckle lime at 4,125 feet. Each of these formations produce gas in this pool, but oil so far has been found only in Lansing and Viola limes.

Early in 1936 the Lerado anticline again was tapped further to the southwest when Skelly Oil Co. opened the Gilchrist area south of Cairo, in eastern Pratt County. Gas was found in Viola lime at around 4,245 feet. The Adams discovery and the Lunt extension followed in order.

The presence of the anticline to the south or southwest through Pratt County into Barber County is yet to be proven, although there is a definite trend which the Skelly company has followed from the Gilchrist area to its block in northwest Barber County. The trend has been core-drilled, some lease activity has been reported along the trend in that direction, and future tests may reveal that the anticline extends entirely across Pratt into Barber County.

Development Is Planned

The Cunningham pool is an outstanding illustration of the value of a planned development utilizing natural advantages within a producing area. Such a program was easy of realization in this pool, being owned exclusively by one company. Features of the development program include repressuring, special treatment of oil, salt water disposal, extraction of gasoline from gas, disposal of residue gas and maintenance of surface equipment.

This has not been a sensational oil-producing area, but the steady performance of the well-regulated producers has been satisfactory. Average initial production has been about 325 bbls. of 36-gravity oil daily.

The bulk of oil production at Cunningham is from Lansing lime, although Viola lime has shown some oil. Successful production from Viola in the Lerado field to the northeast indicates similar production may be expected at Cunningham when that horizon is more intensely developed for oil. In fact, few oil tests have been drilled to the deeper zones at Cunningham, prospective production from Viola, Arbuckle and other deep pay formations being held in reserve.

The isolation of the field has required an extensive and comparatively expensive program of development that makes it virtually independent of other areas, the Skelly company utilizing all natural advantages and adding outside features aiding in development.

The time may not be far distant when it no longer is an isolated area. When the present lull in Kansas field activity, resulting from lack of market, ends and operators resume drilling at the pace they followed throughout most of 1937, the Lerado anticline and other sectors of Kingman and Pratt counties will be more fully explored. Indeed, it is likely Pratt County, especially, will be the scene of much drilling within the next two years. Stafford County is getting a big play this year because expiration dates of many long-term leases are near at hand. This play is due to extend south into Pratt County, where many leases expire within the next year or so.

In line with the recent history of exploration in western Kansas, numerous discoveries may be anticipated.

You Don't Need to Sympathize With Workers in Trinidad; Their Life Is

By T. F. SMILEY

Trinidad, just off the northeastern coast of Venezuela and scene of active oil operations, commonly is associated with all those unpleasant conditions that ordinarily characterize hot countries. The very mention of "tropical island"—and Trinidad is a tropical island—stirs visions of poisonous vapors; crawling, biting, stinging insects; big serpents, waiting to crush and kill; thirst, fevers, ague, unseen perils lurking in the thickets.

Though the little island (it contains only 1,754 square miles) need not be set down as the last word in comfort and climatic enchantment, there doesn't seem to be much for the man sent there in connection with oil developments to worry about.

When G. H. Westby, president of the Seismograph Service Corp., Tulsa, flew to Trinidad a few weeks ago to get a close-up of work being done by the company's field crews he had not wholly banished some of the usually accepted ideas.

"The fellows must have a pretty tough time," he ruminated.

But they were living the life of Riley.

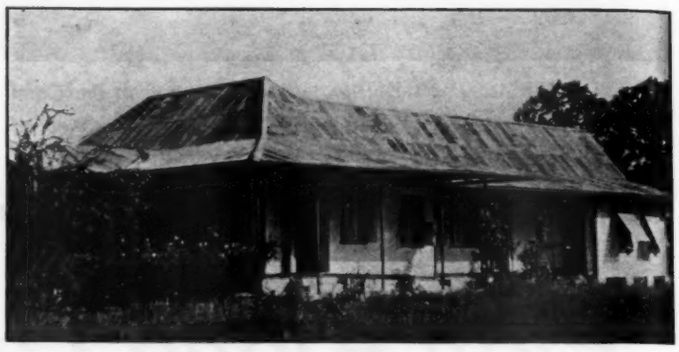
Which is to say a man working under modernized conditions in Trinidad is not likely to suffer any more hardships than his fellows in southern areas of the United States. Perhaps not as many, with the opportunities for fun in Trinidad's favor.

Natives Employed as Laborers

Of six geophysical crews working on the island in the program of developing its petroleum resources four are from the Seismograph Service Corp. Each usually comprises six white men. In addition 150 to 200 native blacks are employed as laborers, each crew using 40 to 50.

E. J. P. van der Linden, as geophysicist in charge, has general supervision, assisted by George Reed. The four crews are under the immediate direction of Judson Jackson, Jack Kimble, Keith Odenweller, and W. B. Perry. Every white man in the outfits is college-trained, and they come from various parts of the United States. Most of them have chosen geophysical work in foreign fields as a career. With the widening exploitation of prospective oil land throughout the world, an increasing number of men trained for foreign service will be needed, Mr. Westby predicted.

The island is 50 miles long from the northernmost limit to the southernmost. For most of that distance the width is around 30 miles. A narrow cape jutting westward from the extreme southern edge makes it 64 miles wide at that point. The oil fields, developed and prospective, lie south of mountain chains extending east and west close to the northern coast.



Office and living quarters near Arima

Sixteen oil companies are operating in Trinidad. Almost all of them are British, a natural corollary of the fact that the island is a British possession, ruled by a legislative council, including the governor, all appointed by the crown. Present exploratory work is explained largely by the circumstance that in order to hold an oil and gas lease its owner must perform certain geophysical work within a given time. The Seismograph Service Corp., which began work on the island a year ago, was the first to employ the reflection method there.

Surface irregularity and a complicated structure make both geological and geophysical work difficult, as compared with that in the southwestern part of the United States for instance. And after a favorable structure has been found the problems of drilling and production are trying, principally on account of the caving character of strata penetrated. Operating companies have high-grade engineers, who frequently are called upon to exercise all their skill to determine the precise degree of pressure to hold on a well to prevent caving.

Substantial progress has been made in development of Trinidad's oil resources. Most of the early wildcatting ventures ended in dry holes, but in 1910 a boom started, and since that year important companies have acquired leases. Cable-tool and rotary drilling methods are used. Pay is found at depths of 2,000 to 3,500 feet.

Drilling crew in jungle

Trinidad Leaseholds, Ltd., incorporated originally to take over several small concerns and to operate on crown lands leased from the government, now has a modern refinery, tank farms, and ocean terminal facilities at Pointe-a-Pierre, 4 miles north of San Fernando. It supplies the British admiralty with fuel oil and recently completed plans for providing the royal air force with aviation spirit. The company formerly sold most of its gasoline in the United States, but since 1931, on account of heavy import duties, it has sought other outlets. Refineries are operated also by United British Oil Fields of Trinidad, Ltd., and Kern Trinidad Oilfields, Ltd.

Camps maintained by the oil companies are models of convenience and sanitation. Airy bungalows are equipped with electric current. Recreational facilities include clubs, cricket and football grounds, tennis courts, and golf courses. Hospitals and first-aid stations are provided. Water for domestic use is purified by passing through settling-cisterns and pressure filters. Incidentally, a government project under way will supply the entire island with pure mountain water.

Airplane Has Brought It Close

Airplanes have placed South America and Trinidad right at this country's back door, it was pointed out by Mr. Westby, who, a flying enthusiast himself, was particularly impressed by the ease with which these points may be reached. Mr. Westby flew in his own plane to Miami, Fla., and from that city to Port-of-Spain, capital of Trinidad, in a big liner of the Pan American Airways. The trip consumed two and one-half days.

"It is easier for an American oil company or other business organization to operate in South America or Trinidad than in any other country outside the United States," declared Mr. Westby. "It is even easier than to operate properties in remote parts of this country. The airplane is the best good-will messenger that we are sending to our southern neighbors. The operation of the Pan American Airways at every point is a lesson in efficiency."

Seismograph crews in Trinidad lead quite normal lives, according to Mr. Westby. "About the hardest part of their work," he said, "is cutting a path through the jungle so that the instruments can be taken to the spot selected. But even that is no worse than the same sort of crews encounter in Mississippi and Louisiana. And to compensate for the difficulties met in that way the men have diversions readily at hand."

Specially made recording instruments, shooting equipment, and drills used in geophysical work on the island are readily portable by hand. They are transported in autotrucks or in wagons hauled by donkeys or oxen as far as roads permit, and then are carried by negro laborers through rough

With Seismograph Isn't All Mosquitoes

Digging shothole with hand auger. Two sit on auger-handle; two turn

lanes slashed in the tangled forest to the point where seismograph shots are to be fired.

"For headquarters while working in a certain area," said Mr. Westby, "we rent a big farmhouse, or 'estate,' as they call it. This building becomes the crew's home for the time being. Electric lights and a refrigerator are installed. Iced drinks and palatable food are available all the time. The men usually go to the estate for the night.

Mosquito Is a Night Worker

"If the region is swampy, then all must be protected from mosquitoes by netting. Even in this respect the situation is no worse than it is in various parts of our own country. Failure to make the mosquito keep its place will invite malaria. The disease is what the doctors call the benign type—not the malignant, in which degenerative changes take place in the blood. Physicians do not give any immunizing treatment, but they prescribe for the disease itself if it appears. Throughout the day the mosquito stays in seclusion. At sundown it fares forth. But the workday has ended then, and the men are in their screen-protected buildings. The native laborer, as well as the white, is provided with mosquito netting for his personal use in infested districts.

"Away from swampy areas, where the mosquitoes are, Trinidad is as delightful a place as you can find. Though the island is classified as tropical, shade temperatures rarely get above 90 degrees. Pith or sun helmets are not needed, as they are in the Far East, and sunstroke is said to be unknown. Heat causes less discomfort than it does in most parts of the United States. Nights are cool. In fact, as soon as the sun goes down persons starting out motoring usually carry wraps along. There are two seasons, the wet and the dry."

Snakes?

"There's less danger from snakes in Trinidad than there is from rattlers in Texas," laughed Mr. Westby. "They tell me there are only four kinds of venomous snakes—two of the corals and two pit vipers. I did not hear of our men encountering any of them. Of course there is the usual run of cockroaches, ants, and so on, which are plentiful in any warm climate and even in cold. We have them in Oklahoma, you know."

The population of Trinidad in 1935, as estimated by the registrar-general, was 439,994. Commenting on the characteristics of the white element, which forms a small percentage of the total, Mr. Westby spoke with enthusiasm of the hospitality and courtesy accorded him and the employes of the company now living on the island.

"The fellows are invited to join country clubs and social organizations," he said, "and they are welcomed into the best homes. And 'best homes' means just as much in point of comfort and culture as it does in American cities, for the operations of big oil companies and other lines of business have brought a high type of families there. Most of these folk are from England, of course.

Recording-car

"The English accent has become so dominant that you find a pronounced form of it even among the negro natives, who have picked up some of the common English expressions which sound a little strange to American ears. 'Boss, don't get vexed with me,' I heard one of them say when he had failed to follow instructions."

It is not difficult to engage native labor, for though indolent by nature, many of the negroes are glad to get jobs at the relatively high wages paid them. They must be allowed to do things in pretty much their own way and in their own time. It is useless to try to hurry them.

"Some of the negroes make capable foremen," said Mr. Westby. "But the man who is the envy of all the rest is the one who shouts a warning for everybody to stand still when a seismographic shot is to be fired. If any man or large animal should be walking over the ground where a seismic computation is being made, earth vibrations would result, and these vibrations would be recorded. Ordinarily we have a horn blown just before the explosion is set off. In Trinidad they have adopted a different practice just to please the natives. They have a negro, with a megaphone, command. 'Steady!'

"Well, the Trinidad native makes a rite out of this job. I can still see a big black raise the megaphone to his mouth, inflate his lungs, roll his eyes, and then roar a long-drawn-out 'Sta-a-a-ay-de-e-e!' "

Trinidad's inhabitants are for the most part descendants of slaves imported from Africa by sugar planters. They spoke a French patois, which has been influenced in later years by contact with the English. There is a substantial admixture of descendants of coolies, about 2,000 of whom formerly were introduced annually from India. The island was discovered by Columbus in 1498 and originally was colonized by Spaniards. It remained a Spanish possession (although its principal town, San José de Oruña, was burned by Sir Walter Raleigh in 1595) until 1797, when a British expedition from Martinique forced its capitulation. It was ceded to Great Britain in 1802 by the treaty of Amiens.

Pleasant Social Life

Social life on the island is made even more pleasant by the increasing number of tourists who go there from England and the United States in search of health and recreation. Most of the social activity centers around Port-of-Spain and San Fernando, the principal cities. Virtually all parts of the island are within 50 miles or less of these cities, and a system of asphalt roads extends in all directions.

"There is no speed limit," remarked Mr. Westby, "but you can't go much faster than 45 miles an hour anywhere, for the highways follow old winding wagon trails. It is common practice for the boys to go to Port-of-Spain to spend week-ends. They play golf or tennis or watch the horse races. There are plenty of other diversions. Some like to have an evening of bridge. Things are so far from unpleasant as a matter of fact that the wives of some of them join them. The latest to take this step were Mrs. Judson Jackson and Mrs. H. B. Stedman, who sailed from New York February 14. Take it altogether, I'd say Trinidad is the best foreign assignment I know."

Dynamite-wagon

Compromise at Wilmington But Situation Still Grave

LOS ANGELES, Calif., Mar. 21.—California operators are losing valuable time in reducing crude production and if this procrastination continues crude and refined prices will go tumbling because of rapidly filling tanks and reservoirs. At the end of the week there was enough tankage available to handle current overproduction for about three weeks. As a result of the failure of operators to curtail, the state output reached the highest point attained since the latter part of February 1930.

Crude-oil production on March 13 totaled 753,127 bbls., but increased to 761,618 bbls. on March 14 and jumped to 768,693 bbls. on March 15, due primarily to increased production in the Wilmington field. Wilmington production was 112,838 bbls. on March 13 and 118,513 bbls. on March 14 and 127,079 bbls. on March 15. The Central Committee, fearing a price reduction before it could secure the necessary reduction in production, called a special meeting and as a result Wilmington operators made some concessions.

Effective Friday morning, March 18, the allowable maximum well production was reduced from 2,000 bbls. per day to 1,000 bbls., and by noon most operators were fairly well in line. Heretofore, operators have been flowing their new wells for 15 days, during which they recovered the cost of drilling operations, but operators have approved a plan whereby new wells will be flowed at a daily rate of 2,500 bbls. per day for one week, after which they must be cut back to a maximum of 1,000 bbls. per day, except where a company is finishing its first well, which will be privileged to flow at a maximum rate of 2,500 bbls. per day for two weeks. This exception was granted in an effort to equalize the situation, as there are a few operators who have not yet reached the pay with their first producer in the Wilmington field and consequently did not participate in the wide open production program that has characterized operations for the past two months.

Reduction of the maximum production of wells in the Long Beach harbor section of the Wilmington field from 2,500 bbls. per day to 1,000 bbls. each per day will help, but there are enough new wells nearing completion to offset partially the reduction effected. The Wilmington field committee is of the opinion that the new measures adopted will reduce production to approximately 100,000 bbls. per day, but this is hardly likely as there are five new wells expected to show substantial production being prepared for production tests within a few days. The future rate of development will exert an important effect on production of the field during the next several months due to the large number of proved locations available. Ford Motor Co. is insisting that General Petroleum Corp. produce not less than 25 per cent of the potential production in wells on its property. This insistence makes it necessary for operators holding adjoining acreage to follow a similar procedure and will ultimately prevent any additional reduction in production unless the present stipulation is revised.

The partial solution of the production problem in the Wilmington field will greatly enhance the possibility of preventing a general collapse in the existing price structure of crude and refined oil, but it will not necessarily prevent a downward revision in prices, as other fields are also contributors to the present overproduction. Operators in the Lake View section of the Midway-Sunset field have not yet given general approval of the proposed production moratorium of five days scheduled to go into effect on April 1. Refiners and marketers, both large and small, are reluctant to reduce crude and refined oil prices, and will hold off until the last minute, but they can only go so far, and when tankage is filled they must cut further purchases.

A number of independent refiners who have been paying cash bonuses for sweet crude oil in the open market on a day-to-day basis eliminated cash premiums a few days ago. This group believes the present price structure cannot stand up in the face of the high production and is accordingly reducing crude and refined inventories. They can always go back on the old basis of paying premiums if necessary, and it offers security during the interim. It has become evident during the past few months that the Bureau of Mines has overshot its mark with respect to California recommendations, which have been entirely out of line with existing conditions.

Motions in Madison Cases To Be Heard March 28

Motions for arrest of judgment and new trials in the oil antitrust case in which a jury returned verdicts of guilty on January 22, will be presented to Judge Patrick T. Stone of the Western Federal District Court of Wisconsin, March 28. The motions will be heard in the federal district courtroom at Madison starting at 2 p.m.

Motions for arrest of judgment and new trials have been filed in behalf of all of the 30 individual defendants and 16 oil companies which were found guilty by the federal jury at the close of the trial which started in early October.

The court has not indicated whether the motions to be presented the first of next week will be taken under advisement. Should the court overrule the motions it is assumed sentences will be announced immediately which will end the case so far as the federal district court is concerned from which appeal will be taken to the Circuit Court of Appeals.

Labor Board Hearing on Baytown Refinery Case

HOUSTON, Tex., Mar. 21.—More refinery workers were called by Humble Oil & Refining Co. to refute charges of the oil workers union that the Baytown refinery had violated the Wagner labor act.

Last week the CIO oil workers union placed testimony before Examiner J. C. Batten of the N.L.R.B. alleging intimidation and unfair labor tactics on the part of the refinery.

Controverting witnesses denied the company controlled or dominated the employes' federation, which the oil workers claim is a "company union." Likewise witnesses testified they had not been instructed by their superiors to arm themselves when a strike was threatened in 1936.

Texas Allowable Set

AUSTIN, Tex., Mar. 22.—The railroad commission today fixed the Texas allowable for April, counting the Sunday shutdowns, at 1,318,437 bbls. daily.

Clients Agree to Pay Higher Prices and Keep Plant Going

Cutting a new trail in oil-marketing procedure, Black Gold Refining Co., Oklahoma City, has sent a communication to jobbers and dealers declaring its inability to continue operations at the ruling quotations for gasoline. It names prices at which it is willing to accept orders and asks for cooperation in keeping its employes at work.

Charles W. Scott, secretary, says the reaction to the company's unusual declaration of policy has been gratifying. Customers have indicated their intention not to let it interrupt their business relations. Equally encouraging, Mr. Scott says, are assurances from competitors that they will refrain from any solicitation of Black Gold accounts and, in some cases, announcement they are likely to adopt the same course themselves. The letter to Black Gold jobbers and dealers follows:

"This company is unwilling and unable to continue longer to sell gasoline at prices now reflected in our trade journals. The present price of crude oil, plus conservative operating costs, is approximately 30 cents per barrel above the total sales price of products made from crude, gasoline particularly being abnormally low. With this condition we are forced to either raise our price and cut down this loss, or close our plant and throw all of our employes out of work.

"Effective at once, all previous price agreements will be discontinued and merchandise will be sold on our own posted prices. The changes over the past existing prices will be Black Gold bronze gasoline, 5¼ cents per gallon; Black Gold straightrun gasoline, 4¼ cents per gallon, and Black Gold 42-44 kerosene, 4½ cents per gallon. These prices are subject to changes on 24 hours' posting.

"We fully realize that posting prices above those of our competitors is hazardous, but we firmly believe that our loyal Black Gold dealers and jobbers will appreciate our position and continue to patronize us. We particularly urge that each of you devote as much time as possible to adjusting to a profitable level any subnormal tank-wagon and retail prices in your territories, and in this effort we pledge our whole-hearted cooperation. We will restrict our operations to supply only the products which will be demanded at this new price schedule."

American Chemical Society Program at Dallas Meeting

Research developments in the petroleum industry will be reported to the ninety-fifth meeting of the American Chemical Society to be held in Dallas, Tex., April 18 to 22, it is announced by Dean Frank C. Whitmore of Pennsylvania State College, president of the society. Representatives of leading oil companies, and scientific workers from industrial and university laboratories will participate. An inspection tour of the East Texas oil fields is planned.

Dr. Per K. Frolich, director of the chemical laboratory of Standard Oil Development Co., Elizabeth, N. J., will deliver an address on "Recent Chemical Developments in Petroleum Technology," at a general session on April 18.

The Division of Petroleum Chemistry, of which Dr. Jacque C. Morrell, associate director of research of Universal Oil Products Co., Chicago, is chairman, will hold technical sessions on Tuesday, April 19. A group of 11 scientists of Universal Oil Products Co. in addition to Doctor Morrell will present five papers at the morning meeting, as follows:

"Solvent Extraction of Diesel Fuels," Charles G. Dryer, Joseph A. Chenicek, Doctor Morrell, and Dr. Gustav Egloff, directors of research; "Reactions of Hydrocarbons in Electrical Discharges," Charles L. Thomas, Doctor Egloff, and Doctor Morrell; "Dehydropolymerization of Ethylene," Vasili I. Komarewsky and N. Balai; "Destructive Hydrogenation of Alkylated Monocyclic Aromatic Hydrocarbons," Dr. Vladimir N. Ipatieff and Herman Pines; "Studies in Doctor Sweetening; Factors Influencing Inhibitor Effectiveness," Charles D. Lowry, Mr. Dryer, Charles Wirth III, and R. E. Sutherland.

Prof. J. R. Bailey, of the University of Texas, collaborates in two reports on "nitrogen compounds from petroleum distillates" which will be read on Tuesday afternoon. With Stiles M. Roberts, he will survey "Fractional Sulfiting of Bases and Fractional Degassing of Their Acid Sulfites"; and with W. Nelson Axe, "Isolation of Four Quinoline Homologs and a Trinuclear Aromatic Base from California Petroleum."

Maryan P. Matuszak, of Phillips Petroleum Co., Bartlesville, Okla., will discuss "Sulfuric Acid Analysis of Gaseous Olefins," and L. C. Chamberlain, Jr., and R. F. Boyer, of Dow Chemical Co., Midland, Mich., "The Physico-Chemical Properties of Acidizing Solutions and Their Effect on Well Treatments." The Petroleum Division will hold a dinner at the Hotel Adolphus, Dallas, on Tuesday evening.

East Texas Chapter of A.P.I. to Meet at Kilgore, April 12

The next meeting of the East Texas chapter of the American Petroleum Institute, division of production, will be held in the high school auditorium at 8 p.m. Tuesday, April 12, in Kilgore, Tex.

W. L. Childs, vice president and general manager of the Reed Roller Bit Co. of Houston, Tex., will speak on "The Petroleum Industry and Its Relation to Business."

J. L. Risinger, safety director for Magnolia Petroleum Co. at Dallas, will speak on "Safety in Oil Field Operations."

the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by The Petroleum Publishing Company at Tulsa, Oklahoma

More Important

The principles involved in the Mexican dispute are much more important than Mexican oil.

During the past three years the oil companies operating in Mexico have utilized every possible means to bring about a satisfactory solution of the labor problem there but it has proved to be more political than industrial.

Before the latest demands were announced oil companies were paying twice the prevailing wages and were taking care of their employes in other ways in a manner not duplicated by any other industry.

The expropriation decree of the past week was the logical outcome of a deliberate program to divest the private oil companies of their properties and turn them over to the government in furtherance of its policy of state socialism in the operation of the industry.

No one who has followed the progress of the negotiations can doubt that the constantly increasing demands of labor, supported by the government and culminating in the impossible terms dictated last December, were made with the idea that the operating companies could not accede to them and that there would be nothing left but to bring about the situation that has developed.

Wholly aside from the intricacies of international law, the rights of the American and British oil companies have been violated, and the duty devolves upon their governments to see that the acknowledged rights of their nationals are recognized. The least that can be done is to press for prompt settlement in full for the properties.

Later, when the Mexican government finds it can not operate these properties on the basis demanded by labor, it should be seen that they are not turned over to somebody else for private operation.

The state department at Washington should give earnest consideration to the broad national issues involved in this situation in Mexico. Oil is going to be in increasing demand, the most important resource, excepting food, in the expanding operations of commerce and industry and for the national defense.

It is certain we must look more and more for supplies outside this country. It is certain also that increasing volumes of oil will be found in unexplored areas outside this country. And it is well that it should be so. America can not assume that it can supply all the world or even that its own petroleum resources will be sufficient to supply its own needs indefinitely.

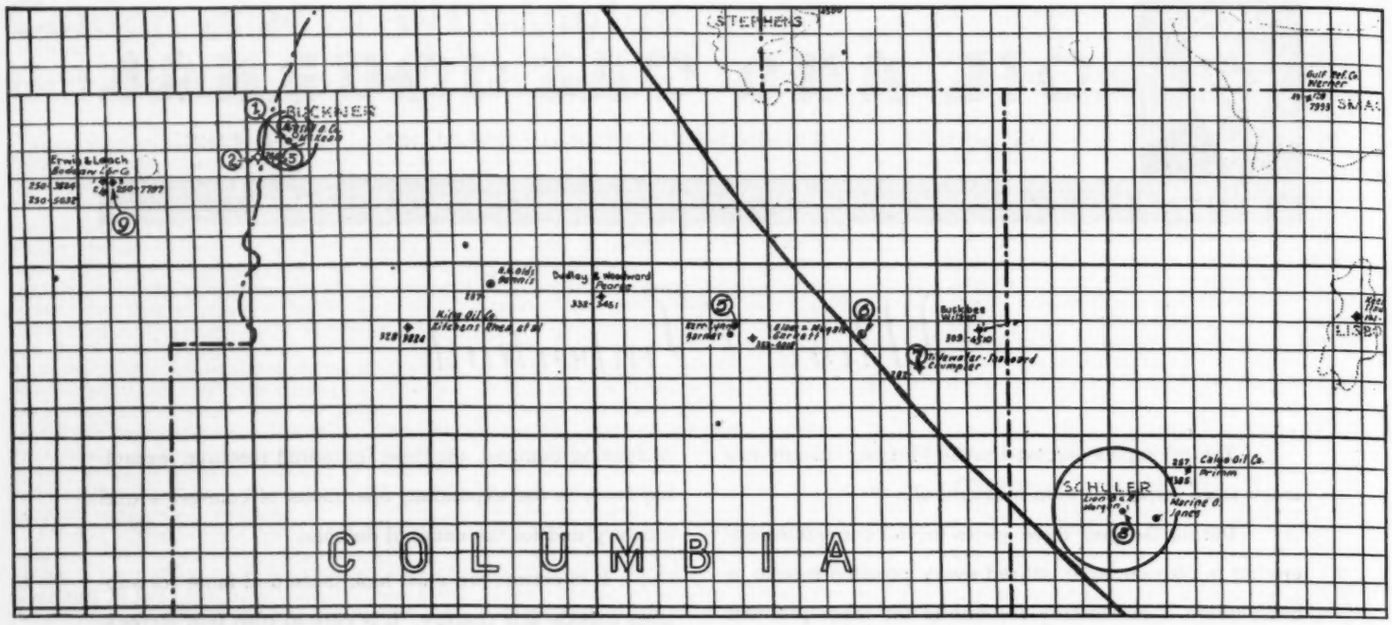
The American oil industry led in the discoveries and development of petroleum. It is essentially an American industry. The great majority of the important developments in drilling, production, transportation and refining have originated in the United States.

This country has within its borders several units which have already proved their ability to find oil abroad and have the capital to make it available to the world.

Oil is where you find it, and where Americans find it they should be supported by their government in rightful disposition of it. American companies have gone into the most remote and inaccessible parts of the globe to find oil and have thereby greatly strengthened their country's position in world commerce.

Unless international relationships are to be reduced to brigandage, as in the Old World today, and treaties, agreements and concessions are to be regarded as mere "scraps of paper" the governments of this hemisphere must take a stand for mutual respect of their obligations.

It gets down to this. American companies without government subsidies and relying entirely upon their own efforts can continue to maintain a dominant position in oil operations outside this country. But they must have the support of their government commonly accorded in international operations.



The Buckner-Shuler trend of new production in the Big lime extends, according to current development, across Columbia and Union counties, South Arkansas, in a general northwest-southeast direction. (Key at bottom of page)

Newest South Arkansas Lime Gets Widespread Attention

By GEORGE WEBER

SHREVEPORT, La., Mar. 21.—After more than 10 years of relatively dormant drilling activity, Arkansas is again in the new development picture. The past year has witnessed three important field discoveries. Present indications presage even greater wildcatting success, as operators develop what appears to be an important Big lime trend in Columbia and Union counties.

The current interest shown in South Arkansas is the first substantial revival which that state has seen since the decline in development of the Smackover-El Dorado district. According to the annual report of the Arkansas Board of Conservation, total oil wells completed during 1937 was 109, representing the first major upturn in activity since 1924. Indications of present drilling in the southern section of the state are that 1938 will add at least 200 producers in the newer fields, as the estimates for the first quarter total 50 wells.

The recent discoveries of Shuler and Buckner, and the indicated new Magnolia production area, represent deeper exploration, and correspond to the recent success in deeper discoveries throughout the oil country. Moreover, the three fields form an apparent trend, and interest is high in the area of the new production.

The accompanying map shows the relative locations of the important fields and wildcat tests in the Shuler-Buckner trend. The eastern edge of the Glen Rose anhydrite is indicated by the diagonal northwest-southeast line. The strike of the Big lime through the area is more to the east and west than that of the Glen Rose. Four general names are being considered by local geologists for the four principal formations in the section.

Suggested New Nomenclature

The Cotton Valley or Shuler is suggested to include what is termed the Lower Marine. The Buckner formation represents the red beds and anhydrite immediately above the Big lime. The Smackover formation is the new name suggested for the Big lime, an upper member of which goes by the name of Reynolds lime in the Shuler field. Eagle Mills is the tentative name for red shales, mudstones, anhydrite and salt lenses below the Smackover or Big lime. Production in the Smackover lime is the current center of attention.

Shuler produces from two groups of sands in the Lower Marine or under the suggested new nomenclature, the Cotton Valley or Shuler formation. The Smackover formation, or locally the Reynolds lime, is also producing in two wells at Shuler.

At the other extreme of the present indicated trend, the Buckner field produces from the Smackover lime under the new classification. The indicated new field of the Kerr-Lynn Oil Co. also shows production in the Big or Smackover lime.

Extension of the producing area to the northeast is practically assured, by the successful drill stem test in the third well to be drilled at Buckner.

KEY TO MAP

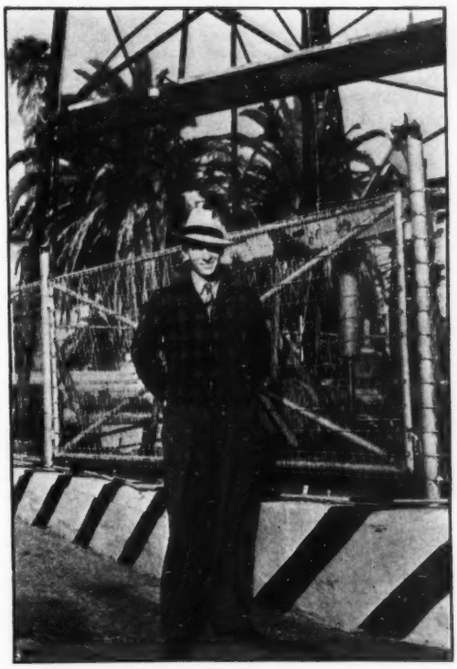
Key No.—	1	2	3	4	5	6	7	8	9
Field—	Buckner	Buckner	Buckner	Buckner	Mag-nolia*	Wildcat	Wildcat	Shuler	Wildcat
Status markers—	Prod.	Abd.	Drlg.	Drlg.	Drlg.	Drlg.	Abd.	Prod.	Abd.
Elevation	257	256	253	272	321	313	282	229	251
Nacatoch	1,427	1,440	1,456	....	1,810	1,874	1,948	....	....
Chalk	1,883	....	2,151	....	....	2,190(?)	2,252	....	....
Tokio	2,485	....	2,506	....	2,643	....	2,983	....	....
Red beds	2,760	....	2,756	....	3,060	....	....	....	....
Mass. anhy.	3,295	3,314	3,286	3,288	3,147	....	3,238	....	3,315
Mass. anhy., base	3,434	3,455	3,420	3,420	3,204	....	....	....	3,475
Buckner	6,950	7,025	....	7,000	7,472	....	....	....	7,375
Big lime	7,195	7,272	....	7,264	7,618	....	....	7,606	7,650
Total depth	7,258	7,282	....	7,272	7,740	....	7,563	7,688	7,707

*Tentative name.

(1) Standard Oil Co. of Louisiana No. 1 McKean, section 8-16-22. (2) Taubel and others No. 1 Tatum, section 18-16-22. (3) Standard Oil Co. of Louisiana No. 1 Bodcaw-Barbara, section 18-16-22. (4) Standard Oil Co. of Louisiana No. 1 Crone, section 8-16-22. (5) Kerr-Lynn Oil Co. No. 1 Barnett, section 14-17-20. (6) Standard Oil Co. of Louisiana No. 1 Phillips, section 15-17-19. (7) Tide Water and Seaboard No. 1 Crumpler, section 24-17-19. (8) Lion-Phillips No. 1-A Edna Morgan, section 18-18-17. (9) Erwin & Leach No. 3 Bodcaw Lumber Co., section 20-16-23.

Deeper Development in Torrance Field

By JAMES A. BERMINGHAM, JR.
Petroleum Engineer, Texas Co., Long Beach, Calif.*



AUTHOR—J. A. Bermingham, petroleum engineer for Texas Co. at Long Beach

The nature of this paper pertaining to the present deep zone drilling activity in the Torrance field is not intended to be comprehensive but merely generally informative.

The Torrance field is located in the Los Angeles Basin 20 miles south and slightly west of Los Angeles. It occupies an area approximately 6 miles long and slightly over 1 mile in width. A slight but broad elevation trending northwest-southeast reflects the anticline on the surface.

The field was discovered in 1923. The development reached its peak in 1925 at which time 904 wells had been drilled. There are 4,500 proven acres in the field. The production from the Main zone has been between 20,000 to 25,000 bbls. per acre. A typical generalized geological column of the sediments underlying the Lomita area of the field is shown in Figure 1. As indicated in Figure 1, the Main zone in the Lomita area is found 200 feet below the Pliocene-Miocene contact. The Main zone consists of 300 to 400 feet of well-saturated, fine grained sands (30 per cent) interbedded with streaks of hard Miocene shales. The initial completions ranged from 300 to 2,000 bbls. daily of 18- to 25-gravity oil.

Recent developments have resulted in a deepening campaign in the field, which has been relatively inactive the past 15 years. The objective horizon in the present deepening campaign is a newly discovered zone which was encountered stratigraphically 1,600 feet below the top of the Main or old producing zone.

Discovery of Lower Zone

The new zone is referred to as the Del Amo zone. It was discovered and first produced in 1936 by Chanslor-Canfield Midway Oil Co. No. 23 Del Amo in the central portion of the field. This well commenced to deepen in July 1936 and was thoroughly cored. Thirteen hundred feet of hard Miocene sediments was penetrated before encountering at 4,817 feet a glaucophane-talc schist complex of pre-Jurassic age.

*Before the Los Angeles Basin Chapter of the American Petroleum Institute, Division of Production.

Directly overlying the schist 50 feet of schist conglomerate was cored. The conglomerate, regarded to be of Middle Miocene age, is the same horizon from which large production is obtained in the El Segundo field 10 miles to the north. A string of 5-inch casing was set in the nodular shale directly above the conglomerate, which showed some free oil in the upper portion. On a production test the well made considerable water with a trace of oil. A water-locating survey indicated that the uppermost portion might be productive and that a high-head water was in close relationship with the possible productive streaks.

Attempts to exclude this water were futile so in November, 1936, the well was plugged back to the newly discovered oil sand interval. The well was gun perforated from 4,395 to 4,430 feet and completed flowing 120 bbls. daily of clean 27-gravity oil in November, 1936.

Following the success of No. 23 Del Amo, the company selected its No. 2 Redondo to prospect further for the new productive sand. This test was in the extreme western portion of the field and on the highest part of the Torrance structure. The prospect hole was cored thoroughly and showed definitely that the Del Amo zone was not present, the equivalent sand having graded up dip into shales.

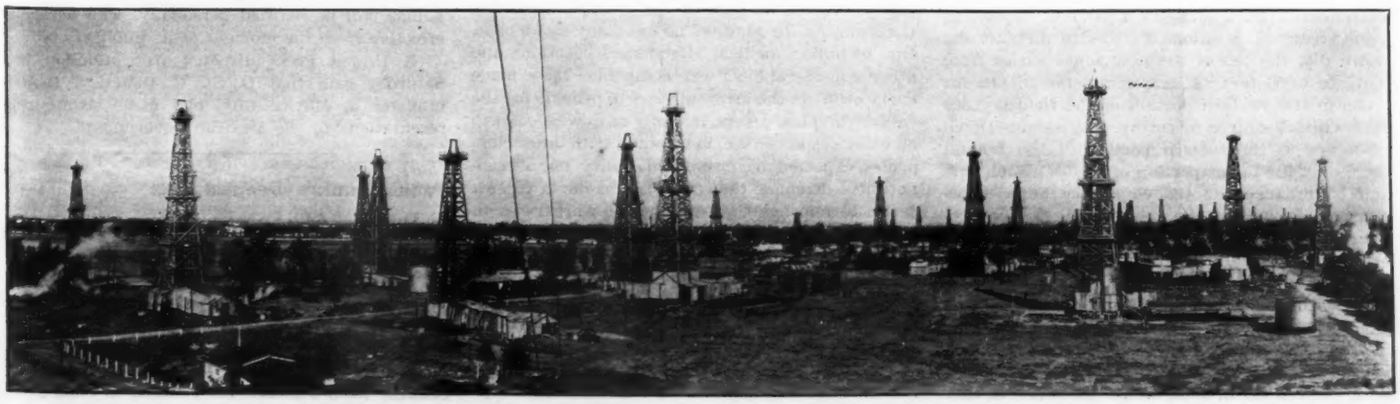
Activity Concentrates in Lomita Area

In 1937, following the discovery of the new zone, several wells were deepened in the Lomita townlot portion of the field. The Lomita area is in the southeast quarter of the central portion of the field. In 1937, the early completions in the Del Amo zone were, in order, Chanslor-Canfield Midway Oil Co. No. 34 Torrance, Four Way Oil Co. No. 1 Torrance, and E. H. Grubbs No. 3 Torrance. Due to completion of these wells flowing 250 to 200 bbls. daily of 27-gravity oil, immediate attention was directed to the area. The success of these three completions proved the Del Amo zone would be productive in the intervening area. A rapid development boom ensued in January, 1938. Wells producing from the Main zone, 3,500 to 3,750 feet in depth, and yielding only 15 to 25 bbls. daily, were taken off production and rotary equipment was moved in to redrill and deepen to the newly discovered underlying zone. New derricks were erected over old holes formerly abandoned and quit-claimed several years ago as unprofitable to operate in the Main zone.

Some operators commenced to deepen their wells through the 6⅝-inch oil strings in the Main zone but the majority started to redrill directly below the shoe of the upper water string set over the producing zone.

The usual problems of reentering abandoned holes existed and various conditions were found. Some operators were successful in attempting to clean out the abandoned water strings to within a short distance of the shoe at 3,500 feet. In other cases, upon reentering the abandoned holes the water strings were found to have collapsed, requiring the commencement of a redrill as high as 1,000 feet. At the present time there are 11 wells completed in the Del Amo zone and 27 redrill-deepening jobs are underway. Of these active wells 20 per cent represent abandoned wells which have been reentered. There are three reasons for activity in the field becoming so intense.

1. The activity is concentrated in the Lomita townlot portion of the field which is comprised of numerous small leases held by many operators.



Section of Torrance field where the new deepening work is in progress

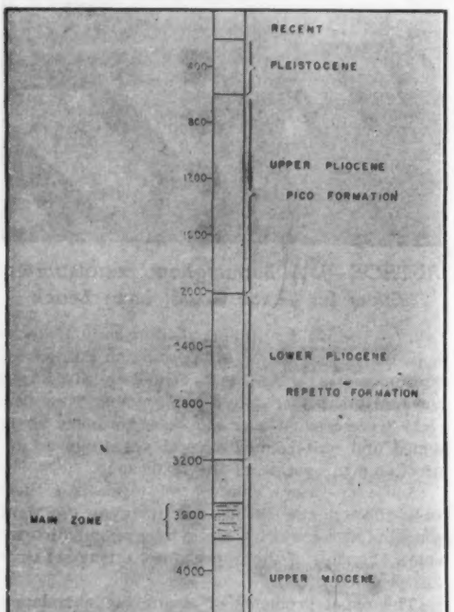
Development is therefore proceeding on a competitive basis.

2. The wells producing in the Main zone for the past 15 years are now yielding only 15 bbls. to 25 bbls. daily, so deepening to the newly discovered underlying zone is considered economical.

3. Several operators are electing to reenter the old abandoned holes in the townlot area to take advantage of 3,500 feet of cased hole from which point to redrill and deepen. In this way they obtain a head start over some competitors.

The Del Amo zone consists of 60 per cent fine, well saturated oil sands interbedded with hard, gray-brown Miocene shales in the upper portion of the zone, while the lower portion is largely a solid sand section.

Cross sections through the Lomita area indicate the formations are dipping approximately



Typical generalized geological column, Lomita portion, Torrance field

12 degrees to the southeast along the plunge of the structural nose. This is substantiated by dips in various cored sections. The top of the Del Amo zone in the western portion of the Lomita area is encountered from 4,780 to 4,850 feet depending upon structural position. Farther to the east and down dip, the top of the new zones varies from 4,975 to 5,050 feet. A safe completion depth for wells in the western portion of the field is 5,000 feet without danger of coring gray sands. Down structure in the eastern portion of the Lomita area, only the upper portion of the Del Amo zone can be produced as the edgewater table is occupying one-half of the zone which can be produced higher up dip. Wells in this extreme eastern area can safely bottom at 5,100 feet without penetrating gray sands which yield a high-head water. The salinity of this bottom water ranges from 1,400 to 1,500 grains per gallon.

There are indications of a few minor portions of the Del Amo zone which look weak and have been blanked off in some wells. However, in this stage of development little is known regarding any definite wet horizon within the Del Amo zone. A high-head water, however, appears to continue through the Lomita area directly above the Del Amo zone. Its natural fluid level appears to be approximately 1,000 feet.

In conclusion, the following conditions have been observed in the present stage of development of the Del Amo zone in the Lomita area of the field:

1. The Del Amo zone was not found on the highest portion of the Torrance structure.

2. The Del Amo zone becomes progressively more sandy down structure from Chanslor-Canfield Midway Oil Co. No. 23 Del Amo to and within the Lomita area, indicating that the zone possesses characteristics of a flank sand thickening to the east.

3. No definite evidence of a major fault has been observed at this time, however, slickensides have been noted in various cored sections.

4. The development, though rapid, has been orderly. Wells have been carefully cored and electrically logged, which has minimized the hazards and aided materially in obtaining successful completion of wells in the newly discovered zone.

5. The position of the edgewater in the Del Amo zone in the southeast portion of the Lomita area occupies approximately one-half of the zone which can be included in the productive interval of the zone in the northwest portion of the Lomita area. The completions and expected recoveries in the southeastern portion of the Lomita area are accordingly lower.

EXPROPRIATION

(Continued from Page 11)

had been represented as a labor dispute, its real nature was political. He said the Sinclair companies never had any labor difficulties in Mexico until "the control of the workers became centered in a group of labor politicians, who, with the backing of the government have shown for some months a determined purpose not merely to secure better wages and working conditions, but to seize control of the oil properties, from production to refining and sale."

"We are not therefore faced," he said, "with a mere question of bargaining as to terms of employment, but with a demand that we pay vastly more than the industry in Mexico earns and with the certainty that at the same time all effective control of operations would pass from the hands of the owners and managers of the industry to irresponsible persons having no knowledge of any business, much less any specialized knowledge of the oil business.

"Plans and instructions for taking over the oil properties were prepared by the labor syndicate leaders and secretly circulated before the supreme court rendered its decision upholding the syndicate demands. The Mexican oil worker already enjoys a wage twice that of the average worker in that country. In addition, he has many social benefits, including medical attendance, vacations and other considerations. Our companies have made every effort in the last few years to provide for the welfare of our workers, not only as to wages but in all other respects. We, in common with other companies, expected to continue this policy, but we cannot meet demands that arise not so much from a desire to improve the condition of workers as to take over the properties.

"In spite of the unreasoning attitude of the syndicate officials as distinguished from the workers themselves, the presentation of irrefutable evidence that the demands made by them could not be carried out and, to say the least, the nonjudicial attitude of the courts, I believe that some basis will be established on which we can continue to stay in business in Mexico. Owing to the conditions that have prevailed for some time, the Mexican Sinclair companies have made no recent contributions to profits of Consolidated Oil Corp., and so from this point of view we can regard the present situation with some degree of equanimity while awaiting the day when the present attempt to confiscate foreign-owned oil properties is corrected by the working of what is still supposed to be the international rule against denial of justice and confiscation of property."

Attitude of Governments

While the position of oil companies was of the greatest immediate concern, other businesses in Mexico, chiefly engaged in mining and utility service, feared that it was merely the forerunner of a broader sweep. All available means were being adopted by the various foreign interests to safeguard their investments in Mexico.

Dispatches from London and Mexico City over the week-end indicated that the British government is taking a more determined stand in the oil problem than Mexico had anticipated. There was also considerable speculation as to how President Roosevelt's "good neighbor" policy might be affected by the expropriation decree. The state department reserved probable course of action until all formalities have been followed. From Mexico City it was reported that Josephus Daniels, United States ambassador, had expressed hope to President Cardenas that expropriation would not be employed.

The expropriation decree was published in the official gazette making the order apply as of March 19 unless countermanded or modified. The official decree contained a preamble alleging certain events and practices leading to the drastic order and the following provisions:

Article 1. Expropriation on account of public usefulness and in benefit of the nation is declared of the machinery, installations, edifices, pipe lines, refineries, storage tanks, means of communication, tankcars, distribution stations, vessels and all other furniture and real estate belonging to (here follows a list of the companies concerned) which may be considered necessary in the judgment of the department of national economy for exploration, extraction, conduction, storage, refining and distribution of products of the petroleum industry.

Article 2. The department of national economy, with the intervention of the department of finance as administrator of the nation's possessions, will proceed with immediate occupation of the things affected by this expropriation.

Article 3. The department of finance will pay the indemnity due the expropriated companies in accordance with the constitution and the law of expropriation in cash and within a time limit of 10 years. The department of finance will take funds to make the payments from so much per cent, which will later be determined, of the production of petroleum and it derivatives.

Article 4. The representatives of the companies will be notified personally. The decree is effective from the moment of its publication.

A United Press dispatch from London last Saturday said that O. St. C. O'Malley, British minister at Mexico City, had made strong representations to the Mexican government.

Pennsylvania's Deepest Test Is Dry at 8,842 Feet

COUDERSPORT, Pa., Mar. 21.—The deepest test ever drilled in Pennsylvania was abandoned as dry at 8,842 feet. It was drilled with a rotary outfit by North Penn Gas Co. near the town of Keating Summit, western Potter County. The outfit will be moved to the Hill farm at Germania, Potter County, near the town of Galeton where another try will be made for Oriskany sand, a prolific gas producer in other parts of the county.

Antitrust Activities Not to Be Increased

By HENRY D. RALPH

WASHINGTON, D. C., Mar. 21.—No increase in the antitrust activities of the Department of Justice is expected to result immediately from the confirmation of Professor Thurman Arnold as assistant attorney general in charge of the antitrust division.

Although he is the author of some radical statements in derogation of the conduct of American business generally, Professor Arnold has had considerable experience in law enforcement and, like his predecessors, is prevented by limited appropriations from engaging in any very extensive trust-busting campaign. On the other hand, he may be counted on to continue the aggressive policies of his personal friend, Robert H. Jackson, who as solicitor general will continue to exercise a degree of guidance over the activities of the post he so recently vacated.

The oil antitrust cases left in various stages of progress by Mr. Jackson will be carried through by Mr. Arnold, but subject to the limitation of a small staff of attorneys acquainted with these cases. It is understood preliminary field investigations of charges of gasoline price fixing by major companies in the eastern states have been completed, and that the case could soon be worked up to the point of asking a grand jury investigation or demanding the defendants enter a consent decree if attorneys could be spared for this purpose. However, the antitrust division's oil experts will be busy at Madison next week with the proceedings for a new trial, and probably in the near future with an appeal of this case and disposition of the second Madison indictment. The same attorneys are also needed for the Ethyl Gasoline case which will be reached this spring on the docket of the federal court in New York City. It is therefore a fair guess the East Coast antitrust case will not come to a head for some little time.

President's Attitude

President Roosevelt apparently has abandoned any hope of securing legislation revising the antitrust laws at this session, and while he still promises to send a message on the subject, it is understood he will simply ask a study be made of all problems of monopolistic practices, competition, and concentration of economic power with the view of developing recommendations for definite legislation next year. Likewise, there is little expectation the present congress will pass any special business control legislation such as the Borah-O'Mahoney federal licensing bill, the Patman chain store bill, the Biermann bill to disintegrate major oil companies, proposals to break up patent monopolies, or other bills of this same general type.

The attitude of the administration toward the oil industry may be described as a policy of watchful waiting. Despite recurrent rumors that the federal government may step in with some plan for federal control, Secretary Ickes insists he is proposing no legislation at this time and that no administration bill has been drafted. Nevertheless, government officials are watching closely the operations of state proration laws and the interstate oil compact, the attempt to secure a conservation law in California, the rising stocks of gasoline, the disquieting refinery situation in East Texas and Oklahoma, and all other aspects. The interest of administration officials constitutes a presumption of preparedness to take some regulatory or control steps in the name of conservation if conditions reach a point which could be described as chaotic or hopeless.

A possible forecast of federal oil legislation, and certainly an indication of the trend of administration thinking regarding natural resource industries, is the message on forestry which President Roosevelt sent to congress last week. He called on congress to inaugurate a study of forest conservation problems to prepare for definite legislation next year, and among the subjects he suggested for consideration is the need for federal control of timber cutting on privately-owned lands.

May Indicate Policy

The administration has already interested itself in the development of water resources, the conservation of soil, and control of bituminous coal production. If the lumber industry, a replaceable natural resource, is to be brought under federal regulation, it does not take much stretch of imagination to conceive that similar steps will be taken with regard to petroleum, an irreplaceable and supposedly rapidly depleting resource so vital to the country's internal economy and national defense.

The president's forestry message has an interesting parallel with arguments made from time to time for federal petroleum conservation legislation. By substituting the word "petroleum" for "forest" and some such phrase as "unit pool operations" for "continuous logging operations" the forestry message could be turned into a brief in behalf of oil legislation, and it would seem whatever there is to the president's arguments for federal control of lumbering could be made to apply equally to federal control of oil production.

"Forests are intimately tied into our whole social and economic life," the president stated. "Wages from forest industries support five to six million people each year. Forests give us building materials and thousands of other things in every-day use."

The president said that while the state and federal governments own considerable reserves of forest lands, privately owned forest lands at present furnish the bulk of our forest products and the drain upon them is far beyond the capacity for regrowth, continuing:

"Most of the commercial forest lands are in private ownership. Most of them are now only partially productive, and most of them are still subject to abuse. This abuse threatens the general welfare. . . . The forest problem is therefore a matter of vital national concern, and some way must be found to make forest lands and forest resources contribute their full share to the social and economic structures of this country, and to the security and stability of all our people. . ."

Harris & Ewing

Newest "Trust Buster"—Thurman Arnold

Among the specific recommendations made by the president were study of federal and state legislation "which may be necessary and advisable to insure that timber cropping on privately owned forest lands may be conducted as continuous operations, with the productivity of the land built up against future requirements"; study of "the need for extension of federal, state, and community ownership of forest lands, and of planned public management of them"; and study of "the need for such public regulatory controls as will adequately protect private as well as the broad public interest in all forest lands."

Pattern for Oil?

In concluding, the president declared that "states, communities, and private capital can do much to help — but the fact remains that, with some outstanding exceptions, most of the states, communities, and private companies have, on the whole, accomplished little to retard or check the continuing process of using up our forest resources without replacement. This being so, it seems obviously necessary to fall back on the last defensive line—federal leadership and federal action. Millions of Americans are today conscious of the threat. Public opinion asks that steps be taken to remove it."

It is yet too early to predict what congress may do with the president's recommendations or what sort of forest conservation legislation may result. But whether or not the president's suggestions for federal forest conservation measures will set the pattern for federal control of the oil industry, the forestry message unquestionably gives an insight into President Roosevelt's attitude toward natural resources and what he considers to be the public interest—and therefore the federal government's interest—in the way in which privately owned natural resources are used and the way in which private business is conducted.

World's Deepest Test

Reports the first of the week showed that Continental Oil Co. No. 2-A Kern County land, in Wasco district, Kern County, California, was drilling in hard shale formation at 14,418 feet. The company intends to continue drilling in an effort to get through the shale if possible.

Welding a section to cross a gully and lining up a joint with a tractor in stove piping on an Oklahoma gas line

Pipe Line Activity

Panhandle Eastern Pipe Line Co. Revenues Larger in 1937

NEW YORK.—J. D. Creveling, president of Panhandle Eastern Pipe Line Co., announced that gross revenues of the company and subsidiaries for the 12 months ended January 31, 1938, were $9,746,813 compared with revenues of $6,325,486 in the preceding 12 months. Gas deliveries for the 12 months ended January 31, 1938, Mr. Creveling stated, were 43,189,000,000 feet as compared with 33,333,000,000 feet in the 12 months preceding.

Directors declared the regular quarterly dividend of $1.50 per share on the Class A and Class B preferred stocks of the company. The dividend on both issues is payable April 1 to stockholders of record March 16.

At the annual meeting of stockholders Kenneth E. Walser was elected a director to replace C. Ray Phillips who resigned. All other directors were reelected. At the subsequent directors meeting, all officers were reelected.

Panhandle Eastern Pipe Line Co. reports that the $12,000,000 construction program undertaken early in 1937 has been completed and has resulted in a 40 per cent increase in the company's gas handling capacity. More than 350 miles of new pipe line were laid and new compressors totaling 29,400 horsepower were added to the company's system. The program was the only major construction program in the natural gas industry in 1937 and provided more than 2,500,000 man-hours of work in the past year, according to the company's estimate.

Additions made to Panhandle Eastern facilities in 1937 made possible the inauguration of natural gas service in Fort Wayne, Ind., Komo, Ind., and a number of smaller communities. In addition to construction on the pipe line and compressor system, the company drilled 33 new wells in 1937 and negotiated long term purchase contracts covering 70,000 acres of gas producing land thus greatly increasing its gas reserves.

Venezuela Promised Another Pipe Line to Sea in 1938 or 1939

East central Venezuela, incorporating roughly the southern halves of the states of Anzoategui and Monagas, will have its second pipe line outlet to the sea in the latter part of 1938 or 1939.

Mene Grande Oil Co., Venezuela subsidiary of Gulf Oil Corp., is now engaged in building a road through virgin territory from Oficina to Guanta, a sea port on the northern coast of Venezuela. The road construction is the first step toward the eventual construction of a pipe line approximately 150 miles in length from Oficina on almost a direct airline to Guanta where Mene Grande owns a considerable tract of land in a protected, natural harbor. With a minimum amount of dredging the harbor selected for the pipe line terminal can accommodate ocean going tankers.

Since the territory to be traversed is virgin, the road will be required first to permit distribution of line pipe and construction materials along the route.

During the middle of last month a new 30-mile line was placed in operation from the Tembledor field in sothern Monagas to a river port.

Two new wildcat oil tests are to be started in the near future by Venezuelan Development Co., Ltd., a subsidiary of the Dutch Shell group. One of the tests is to be drilled on a concession near the border between the states of Anzoategui and Monagas just north of the Orinoco River. The other Venezuelan Development test is planned in the state of Tachira in extreme western Venezuela, near the Colombian border. Equipment for the Tachira test is to be moved inland from the east via the Orinoco and Apure rivers.

Gas Line to Chattanooga Again Under Consideration

Piping of natural gas to Chattanooga, Tenn., a project that involves an expenditure of $1,500,000 and construction of an 80-mile pipe line, came closer to reality when the Chattanooga board of city commissioners granted Chattanooga Gas Co. a new 30-year franchise on condition that actual construction work on a natural gas system be under way in 18 months. The company, which announced a proposal to bring in natural gas was under consideration, had requested a 40-year franchise to replace one which expires in 16 years.

Officials said natural gas would probably be obtained from Southern Natural Gas Co., whose lines extend as far as Rome, Ga. It would, however, it was said, be necessary to go as far as Cedartown, Ga., with a new line.

Construction of 15-Mile Turner Valley Pipe Line

CALGARY, Alberta.—Work is in progress on laying 15 miles of 6-inch oil pipe line for Royalite Oil Co. to serve the Turner Valley field. The new line will complete a line already partially laid between the field and Calgary and will enlarge the capacity of the existing system from 13,500 to 24,000 bbls. a day. It will be laid on the surface until spring, and then ditched. S. G. Coultis is in charge. Completion of the new line is expected to result in some increase in the present 42 per cent proration of Turner Valley crude production.

Natural Gas News

Tangle of Litigation Over Texas Rate Regulation

AUSTIN, Tex.—Withdrawal of a plea in the supreme court by the attorney general was the latest development in the Lone Star Gas Co.'s action against the railroad commission's investigation of El Paso and Trenton gas rates.

Assistant Attorney General Hill withdrew the state's application for a writ of mandamus against District Judge Thornton of Dallas and the company to restrain them from proceeding. The state contends the Travis County district court can consider only gas rate matters and the Dallas court is without jurisdiction.

Next will be a hearing in the Dallas court March 24 for four commission employes cited for contempt in continuing their El Paso investigation under a Travis County district court order restraining the company from violating the commission orders.

On March 26 the Dallas court of civil appeals will hear the commission's plea for a writ of mandamus forcing the lower court in that city to dismiss the proceedings.

The case originated after the commission, claiming concurrent jurisdiction with cities to fix gas rates, started investigations in El Paso and Trenton, Fannin County, where affiliates of Lone Star, Texas Cities and Community Gas companies operate.

The company stopped the Trenton investigation with a restraining order granted by the Dallas court. Judge Thornton on March 8 overruled the attorney general's plea to jurisdiction and continued the order. Then the state filed suit in Travis County and obtained an order restraining the companies from interfering with orders of the commission.

Acetylene Gas From Natural Gas?

AUSTIN, Tex.—Experiments in the chemical engineering laboratory at the University of Texas with a view to converting natural gas into acetylene gas are nearing success, according to a preliminary report.

Natural Gasoline Production Slightly Higher in January

Although the production of crude oil declined, the output of natural gasoline showed a slight increase in January, 1938, according to the monthly report prepared by the Bureau of Mines. The daily average in January was 5,875,000 gallons, compared with 5,833,000 gallons in December and 5,056,000 gallons in January, 1937. The most notable gain in January was in California, most of the other states except Arkansas showing declines.

Total monthly production of the various districts, in

gallons, was as follows: Appalachian, 7,307,000; Illinois, Michigan, Kentucky, 1,103,000; Oklahoma, 42,568,000; Kansas, 5,021,000; Texas, 53,547,000; Louisiana, 7,766,000; Arkansas, 1,812,000; Rocky Mountain, 6,183,000; California, 56,805,000. Production in the Kettleman Hills field increased from 14,536,000 gallons in December to 15,946,000 gallons in January, the total gain for California approximating 1,000,000 gallons as compared with December, 1937.

Blending at refineries declined materially in January, with the result that stocks increased 8,106,000 gallons, compared with a decline of about twice that amount in December, 1937. Stocks at refineries increased from 106,428,000 gallons to 107,478,000 gallons during the month, and at plants and terminals stocks increased from 93,408,000 gallons on the first of the month to 100,464,000 gallons on January 31.

Shipments of natural gasoline to jobbers and retailers totaled 12,096,000 gallons, a material increase over December. On the other hand, exports declined from 13,818,000 gallons in December to 7,896,000 gallons in January. Average vapor pressures for all movements decreased in January except that of shipments to jobbers and retailers, which remained the same. The weighted average for all shipments dropped from 21.4 pounds in December to 20.5 pounds in January.

Refinery Projects

Michigan Refiners Form Permanent Organization

SAGINAW, Mich. — Following the lead of other branches of the industry, Michigan refiners of crude petroleum now have organized an association, with offices in the State Savings Bank Building at Alma. President of the new organization, to be known as the Michigan Oil Refiners Association, is B. J. Skinner, president and general manager of Mid-West Refineries, Inc. D. E. Foster, vice president and general manager of McClanahan Refineries, Inc., is vice president of the association, and Reid Brazell, vice president and general manager of Leonard Refineries, Inc., is treasurer. The secretary and traffic manager is Herman Berg, former Detroit representative of the Illinois Central Railroad.

Directors are the officers and: W. L. Davis, vice president of Roosevelt Oil Co., Mount Pleasant; J. G. Fleckenstein, vice president of Crystal Refining Co.; C. J. Westlund, president of Producers Refining, Inc.; H. G. Taggart, vice president and general manager of Northern Refineries, Inc., and Max M. Fisher, secretary and sales manager of Aurora Gasoline Co.

Wasatch to Construct New Refinery at Spokane

DENVER, Colo.—Wasatch Oil Refining Co. of Salt Lake City, Utah, has announced plans for the construction of a 2,500-bbl. refinery at Spokane, Wash. Site for the plant has been selected on the Great Northern right of way, north of Hillyard, and construction work is expected to be started immediately. The plant will operate on crude from the Cut Bank field of Montana. Cracking facilities are to be included in the refinery.

Michigan River Terminal Being Rushed by Bay

SAGINAW, Mich.—This week was expected to see completion of the Saginaw River mouth plant of Bay Refinery Co., built by independent operators to provide an additional market outlet for the Buckeye pool in Gladwin County. Bay Pipe Line Co.'s 33½-mile pipe line from Buckeye to the Bay refinery has been completed and given its tests. Approximately 6,650 bbls. of crude were required to fill the 6-inch line.

T. Glen Caley, secretary-treasurer of both companies, reports the refinery will have 15,000 bbls. of crude on hand at the terminal when it begins operations. Meantime, work is being rushed on a loading dock in the Saginaw River, adjacent to the refinery, to accommodate large lake tankers which will be used to convey crude and refined products to market. The dock is scheduled for completion by the end of March.

Natural Gasoline

Shell Establishes Houston Natural Gasoline Division

T. R. Goebel, manager of the gas-gasoline division of Shell Petroleum Corp., has established a natural gas-gasoline division at Houston for the company. E. S. Quinn has been placed in the gas and M. R. Church in

T. R. GOEBEL

the natural gasoline end of the division at Houston. General supervision of both the Tulsa and Houston divisions will remain under Mr. Goebel who will continue to reside in Tulsa, dividing his time between the two offices. B. R. Carney, formerly of Shell Union Oil Co. at New York City, has been sent to Tulsa as assistant to Mr. Goebel.

N.G.A.A. Convention Again Features Kinks Session

The seventeenth annual convention of the Natural Gasoline Association of America, scheduled for May 11-13, 1938, at the Hotel Tulsa, Tulsa, Okla., will again feature the "Operating Kinks" session for field and laboratory men of the natural gasoline industry, according to a recent announcement of J. W. Vaiden, Skelly Oil Co., chairman of the convention program committee.

This will be the third consecutive year for this program feature, which was originally an experiment, and is continued because of the broad response of operating men. Entries at the 1937 convention more than doubled the number presented the previous year, and for this reason the program committee voted unanimously to reserve the entire morning of May 13 for these interesting discussions.

As at its initial presentation, this session will take the form of a prize contest in which field men will compete with their original ideas for solving production and operating problems in or about natural gasoline plants. Eight prizes, totaling $125, will be given to the winners of the first and second places in the four classifications into which the contest is divided.

J. A. LaFortune, Warren Petroleum Corp. and president of the association, is particularly enthusiastic about this field man's day. "Until recently, our convention programs have concentrated largely on subjects dealing with the highly technical phases of our industry or the broader aspects of marketing and have left little room for discussion of operating problems," he said. "While many of these subjects are interesting to the field men, the superintendents and laboratory technicians, subjects more closely allied to their own problems are naturally more appealing. It is for this reason that the 'Kinks' session came into being. It provides a forum where this large group of invaluable assistants can discuss their own technical subjects and exchange operating ideas. I feel that it is particularly valuable to plant men, and all natural gasoline manufacturers should urge as many of their men who can conveniently attend to arrange to be present for these discussions."

The "Operating Kinks" session will be an informal round-table discussion at which the field man may present his own ideas for improving or simplifying any operation connected with the manufacture of natural gasoline. It is to be an opportunity for public expression of the many valuable ideas developed by the men on the operating end of the industry. These ideas can be exchanged, criticized and discussed at the session and prizes will be awarded by a committee of gasoline plant operators. The first and second prizes in each of four classifications will be $15 and $10, respectively, and a grand prize of $25 will be awarded for the most practical and valuable idea of all classes. F. E. Fisher, Skelly Oil Co., is chairman of the session and awards committee.

The convention program committee, consisting of J. W. Vaiden, Skelly Oil Co., Tulsa, chairman; R. C. Alden, Phillips Petroleum Co., Bartlesville; W. A. Baden, Warren Petroleum Corp., Tulsa; R. E. Beckley, Standard Oil of California, San Francisco, Calif.; T. R. Goebel, Shell Petroleum Corp., Tulsa; J. R. Jarvis, Lone Star Gasoline Co., Dallas, Tex., and P. M. Raigorodsky, Glen Rose Gasoline Co., Tulsa, has announced the following rules and regulations for the submission of ideas for the field men's session:

Rules of Contest

1. Any employe of a natural gasoline manufacturer may submit one or more "Operating Kink" ideas.

2. Permission of the employer must be secured before any idea is submitted.

3. Each idea must be submitted in writing and three copies of each must be presented in the form designated on the "Operating Kink" blanks which may be secured from the Natural Gasoline Association of America, 819 Wright Building, Tulsa, Okla.

4. One clear drawing or distinct photograph may be submitted with each kink, and wherever possible the association will make slides therefrom.

5. Five minutes' time will be allotted to an employe, at the round-table discussion, for the explanation of each of his kinks.

6. The originator of the kink, although urged to do so, need not be present to explain his idea. Any employe of a natural gasoline manufacturer may explain the idea of any other employe of the same concern.

7. Prize awards are to be made by a committee of gasoline plant operators, and their decisions will be final.

8. All "Operating Kink" entries should be in the N.G.A.A. offices by May 1, 1938, in order that the judges may have ample time to study and classify the entries before the meeting date.

9. Any "Operating Kink" may be made within the following classifications:

(a) Operation or maintenance of engines, compressors, pumps, turbines, electric motors, electric generators or boilers.

(b) Metering or other volumetric measuring; temperature controlling, pressure controlling, volume controlling, liquid-level controlling, laboratory equipping or operating methods.

(c) Gasoline or oil distillation; fractionation; gasoline absorption, condensation or cooling; gasoline or gas treating.

(d) Field pipe-line and other field operation and maintenance; gasoline storing; gasoline loading; special tools, labor-saving or safety devices; accounting or record-keeping methods; or any other phase of natural gasoline manufacture not covered within the preceding classifications.

Bureau April Forecast Two Per Cent Over Year Ago

The daily average supply of domestic crude oil estimated by the Bureau of Mines to meet the demand in April, 1938, is 3,361,700 bbls. This is 29,900 bbls. less than the estimate for March, 1938, 137,600 bbls. (4 per cent) less than the actual daily production for April, 1937, but 2 per cent higher than the demand for domestic crude for that month. The comparatively low estimate for April, 1938, reflects the current recession as well as the probability that excessive stocks will be reduced by curtailing crude runs to stills.

Crude oil production from January 29 to March 5 averaged 3,341,000 bbls. daily. Crude oil stocks increased 241,000 bbls. net, made up of an increase of 542,000 bbls. in domestic grades and a decline of 301,000 bbls. in foreign crudes. The subtraction of the increase in domestic stocks from production gives 3,326,000 bbls. daily as the demand for domestic crude oils.

Motor Fuel

Domestic demand—The estimate for domestic motor-fuel demand for April, 1938, is 44,500,000 bbls., or 2.5 per cent higher than the actual demand for April, 1937.

Exports—Motor-fuel exports have been estimated as 3,300,000 bbls., based upon returns by exporters. This is 300,000 bbls. less than the estimate for March, 1938, but 513,000 bbls. higher than the actual exports for April, 1937.

Stocks—Stocks of finished and unfinished gasoline amounted to 85,873,000 bbls. on January 31. According to the American Petroleum Institute, these stocks increased about 5,800,000 bbls. during February, bringing them to approximately 91,700,000 bbls. as of February 28. They have further increased 1,750,000 during the first 11 days of March, indicating they will be well above 93,000,000 bbls. as of March 31 unless reductions are accomplished during the latter part of the month.

Crude runs figures of the A.P.I. show declines in recent weeks. Part of these declines was due to plants closing down because of unsatisfactory market conditions, but a desire on the part of the others to reduce runs to improve inventories is also evident. In April the factors tending to curtail runs will probably offset the seasonal increase. The estimated decline in gasoline stocks for April of 2,500,000 bbls., while high compared with past years, is therefore based largely on the assumption crude runs will not greatly exceed 3,150,000 bbls., the average of recent weeks.

Gasoline Production—Benzol and "direct" sales and losses of natural gasoline have been estimated as 900,000 bbls., making the estimated production of gasoline 44,400,000 bbls. This is distributed among the various districts as follows (thousands of barrels): East Coast, 6,420; Appalachian, 1,520; Indiana-Illinois, 7,630; Oklahoma, 2,630; Kansas, 2,390; Inland Texas, 3,430; Texas Gulf, 10,530; Louisiana Gulf, 1,380; North Louisiana-Arkansas, 910; Rocky Mountain, 1,110; California, 6,450.

Crude Petroleum

Runs to Stills—Natural gasoline consumption at refineries in April is estimated as 6.0 per cent of the total gasoline required, or 2,670,900 bbls. The yield of straight-run and cracked gasoline is estimated as 44.2 per cent, compared with 43.3 per cent in March. The application of this yield to the estimated straightrun and cracked gasoline production of 41,730,000 bbls. gives refinery crude-oil requirements as 94,400,000 bbls., or 3,147,000 bbls. daily.

Foreign Crude Runs—Foreign crude run to stills is estimated at 2,100,000 bbls., 100,000 bbls. less than the March estimate.

Exports, Fuel, and Losses — The estimate for crude oil exports has been lowered to 6,050,000 bbls. in accordance with forecasts from exporters, which indicate smaller shipments for all districts except California. Recent developments in Europe may tend to increase exports of crude oil, but the net effect is unpredictable. The estimate for crude oil burned as fuel and losses is 2,500,000 bbls.

TABLE 1—ESTIMATED CRUDE OIL REQUIREMENTS BY STATES

(Daily averages in barrels)

State—	Forecast— April, 1938	Forecast— Mar., 1938	Actual production Jan., 1938
Texas	1,329,800	1,344,900	1,317,700
California	698,700	684,600	709,900
Oklahoma	526,500	547,700	561,600
Louisiana	239,800	239,400	253,000
Kansas	173,000	176,700	183,300
New Mexico	106,000	105,100	105,000
Michigan	51,400	51,600	50,500
Pennsylvania	50,300	49,700	50,500
Wyoming	46,600	46,400	47,300
Arkansas	40,000	38,200	41,500
Illinois	34,700	30,700	36,400
New York	13,700	13,800	14,300
Kentucky	13,400	13,900	13,300
Montana	12,700	13,300	12,100
West Virginia	9,500	9,700	9,400
Ohio	8,800	9,100	8,000
Colorado	4,600	4,500	3,700
Indiana	2,200	2,300	2,100
Total	3,361,700	3,391,600	3,419,600

Refinery Exhibits at Expo To Be of Special Interest

A committee of refinery men to assist in building attendance of this division of the industry at the tenth International Petroleum Exposition in Tulsa, May 14 to 21, has been appointed by C. M. Boggs, chairman. Mr. Boggs, who is president of Kanotex Refining Co. of Arkansas City, Kans., said the exposition will have more exhibits and features of interest to refinery men than ever before.

Among the approximately 600 companies, who have signed contracts for exhibit space, a total of 303 companies will devote all or a portion of their displays to refining. The displays include new devices for greater efficiency, higher recovery, economy, and safety; polymerization; cracking and reforming of butanes and pentane molecules; vapor saving devices; vapor plant recovery development; processes for higher octane gasoline; de-sulfating natural gases to reduce hydrogen sulfide content, or complete elimination of sulfides; processing of lubricants, gases, etc.; machinery for all the latest refining processes.

In addition there will be the refining exhibits in the new Hall of Science, which will contain working models which cost over $250,000. Among the models is a working refinery 25 feet long and 10 feet high, loaned to the exposition with other scientific exhibits by the Chicago Museum of Science and Industry.

Obituaries

OTIS KELLEY, 41, oil field worker, Oklahoma City, died March 16 from burns received in an explosion.

HARVEY A. SMITH, 32, Tulsa, formerly employed in the oil field near Stillwater, Okla., died March 15.

NATHAN M. WEAVER, 79, of El Dorado, Kans., driller on the first well in the El Dorado field, died last week.

E. S. HEYSER, of Dallas, Tex., formerly of Wichita, Kans., operating for several years in the East Texas field, died last week.

GEORGE A. WHITNEY, for 48 years on the editorial staff of the Oil City Derrick, and 28 years a member of The Oil and Gas Journal staff of field correspondents, died at his home in Toledo, Ohio, March 19. He retired nearly one year ago on account of ill health. Mr. Whitney covered the Ohio, Indiana, Illinois and Kentucky territory during 47 years of activity with one or both of the publications, and had a wide acquaintance among producers and pipe line men in his territory. He was born in Elmore, Ohio, February 7, 1863. At the age of 20 he joined the Toledo Bee, later going to the Toledo Commercial, then owned by the late P. C. Boyle. Mr. Whitney covered the oil fields for the Commercial and the Oil City Derrick, and when Mr. Boyle founded The Oil and Gas Journal in 1910, Mr. Whitney became one of its correspondents. He was one of the first oil writers to make a complete coverage of the oil and gas possibilities of Rocky Mountain states of Montana, Wyoming, Colorado, Utah and New Mexico, and for years covered the annual conventions of the Natural Gas Association of America. He served for years as secretary of the Western Oil Men's Association, made up of operators in the Ohio, Indiana and Illinois fields. Mrs. Whitney and three sons survive, Ray H. Whitney of Tulsa; Hubert W. Whitney of Mount Pleasant, Mich., and Vern T. Whitney of Toledo. Funeral and burial were in Genoa, Ohio.

JOHN H. KEYS, 38, Vernon, Tex., oil man, died last week in a Wichita Falls hospital. He was field superintendent of Wheeler Drilling Co.

W. A. DUNIGAN, 51 former president of National Tank Seal Co., Tulsa, died March 16. He opened the Terlton, Okla., field. He was born in Bradford, Pa., and had lived in Tulsa since 1913.

JOHN A. McDONALD, 63, Tulsa, retired pipe line foreman, died March 20. He was a native of Ireland, and came to this country when a child. He lived in Pittsburgh, Pa., until 1935.

JAMES SWANEY, 24, son of Walter G. Swaney, general manager of the Kerotest Manufacturing Co. of Pittsburgh, Pa., died at Odessa, Tex., March 17., where he was employed as manager of the same company.

THE MARKETS*

CRUDE OIL: *Little change is apparent in crude oil markets. Open-market sales at the Gulf Coast indicate weakness rather than strength, but in the rest of the country there are no reports of spot sales under the posted schedules plus the normal transportation charges. There is growing support for the plan to keep crude oil production and refinery operations at March levels or lower in order to offset part of the overproduction of previous months.*

REFINERY: *Mid-Continent gasoline tankcar prices are slightly higher at several points. Improved shipments of gasoline and other products partly due to higher rail rates which become effective March 28. West Coast markets weak. Oils consumed as fuels freely available in practically all refining areas.*

TANK-WAGON AND POSTED DEALER: *Gasoline prices at a few points below normal. No general changes.*

FINANCIAL: *Several oil stocks continue decline. Average for 30 representative stocks for week ending March 19: High, 28.9; low, 26.6; close, 27.3. Week ending March 12: High, 29.28; low, 27.72; close, 27.99.*

**Detailed information in Market Section.*

STANDARD OIL CO. OF NEBRASKA *reported for the year ended December 31, 1937, net loss of $96,125.00 or deficit of 58 cents per share compared with net profit of $74,326.00 or 42 cents per share in 1936.*

TEXAS CORP. *reported net income after all charges for the year ended December 31, 1937, of $54,574,319 equivalent to $5.02 per share on the 10,875,006 shares outstanding at close of 1937. In the preceding year net earnings totalled $38,260,341 or $4.10 per share on the 9,336,739 shares outstanding at close of 1936.*

PHILLIPS PETROLEUM CO. *reported for the year ended December 31, 1937, net income after all charges of $24,113,874 or $5.42 per share. This compares with $17,875,489 or $4.02 per share in the preceding year.*

TEXAS PACIFIC COAL & OIL CO. *reported for the year ended December 31, 1937, net income after all charges of $983,303.00 equivalent to $1.11 per common share compared with $642,330.00 or 72 cents per share in 1936.*

STANDARD SEAMLESS

Cited for service "In Line of Duty" and giving exceptional performance on the firing line in practically every oil field the world over. STANDARD SEAMLESS has *all* of the vital qualities of strength rolled into every length . . . *all* the qualifications for deep well drilling under *all* conditions of service.

SPANG CHALFANT, INC.

General Offices: GRANT BLDG., PITTSBURGH, PA.

Sales Offices: Boston, New York, Pittsburgh, Atlanta, Chicago, St. Louis, Tulsa, Houston, San Francisco, Los Angeles

INTERNATIONAL NEWS

No. 7 Dammam Best Well So Far On Saudi Arabian Mainland

The best completion so far registered on the Saudi Arabian mainland by the California Arabian Standard Oil Co. is indicated in preliminary tests on the company's No. 7 Dammam.

On a preliminary test through a formation tester the No. 7 Dammam indicated substantial amounts of oil and gas. The oil recovered tested 35 degrees Baume, but due to physical conditions the probable volume of production was not determined.

There are three other oil wells and one gasser included in the California Arabian Standard Oil Co.'s property on the Dammam structure, but others are small in comparison to the indicated ability of the latest addition.

Peru and Colombia Slump in Production of Crude Oil

The trend of crude oil production from Peru and Colombia continued downward in February although the loss was at a greater rate in the latter country.

February production in Colombia dropped to 1,479,904 bbls., a daily average of 52,854 bbls., compared with 56,406 bbls. daily registered in January. For the first two months of 1938, Colombia crude output totaled 3,228,476 bbls., compared to 3,285,931 bbls. for the same period in 1937. Tropical Oil Co. is the only producer in Colombia currently shipping oil. The productive Barco concession in eastern Colombia will probably reach the shipping stage before end of 1938 since South American Gulf Pipe Line Co., owned jointly by the Texas Co. and Socony-Vacuum Oil Co., Inc., is now preparing to construct a pipe line to the northern coast of the country.

International Petroleum Co., parent company of Tropical and in turn controlled by Imperial Oil Co., Ltd., produced 1,009,851 bbls. of crude in Peru during February, a daily average of 36,066 bbls., compared to a total of 1,119,764 bbls., or 36,121 bbls. daily registered by the company in January. For the first two months of 1938, International has produced 2,129,515 bbls. compared to 2,416,474 bbls. in the same period of 1937. Lobitos Oilfields, Ltd., and Zarritos produce an average of 6,525 bbls. daily in Peru with Lobitos' properties contributing 6,490 bbls. of that total.

Bergedorf Field in Germany Has Third Completion

The new German oil field near the Hamburg suburb of Bergedorf, discovery of which in the latter part of 1937 was described by Carl H. Ehlers in the International Edition of The Oil and Gas Journal, December 30, has since given further promise of contributing much to the nation's petroleum supply.

In recent weeks the new field's third completion has been reported with production estimated from 750 to 1,100 bbls. per day from about 2,280 feet. The oil horizon was encountered approximately 60 feet higher than expected, resulting in a blowout which carried some of the casing from the hole. Since topping the pay horizon, however, the operators, Preussag in conjunction with the Deutsche Vacuum Oel A.G., have brought it under control. The discovery well completed in September was reported by Mr. Ehlers capable of approximately 1,500 bbls. per day and the second producer was of approximately the same capacity. Owing to lack of storage and transportation outlets, the three wells so far completed are temporarily shut in.

Reports from Allan Dawson, United States consul at Hamburg, says the new Bergedorf field is now considered as a potential threat to supremacy of the famous Nienhagen area which produces approximately 75 per cent of Germany's crude oil. The discovery well and the latest completion are approximately 2 kilometers apart, but the structure is considered to cover a much larger area than so far actually proven. It is reported by the American consul that the second well is being deepened in an effort to establish existence of lower pay horizons. From deepening of the second well, the pay at 2,100 feet is reported to have a thickness of 150 feet.

Prior to the war, there was a natural gas well completed near Bergedorf, but this discovery was not followed up with additional drilling until the drive for self-sufficiency in Germany began under the current four-year plan. At present, Germany produces from its domestic fields only about 10 per cent of its requirements. Within the past year several plants have been completed or started that will lower deficiency by distillation of oil from coal. Despite the coal-processing program, Germany is still decidedly on the deficiency side in petroleum supplies. It is therefore likely the new Bergedorf field development will be pushed with all speed.

Rumanian Exports to France May Be Reduced 65 Per Cent

Exports of Rumanian crude oil to France probably will be reduced about 65 or 70 per cent in 1938 under terms of a modified agreement between the government and Petrofina Francaise.

The original contract obligated Petrofina Francaise to buy (but not necessarily to export) annually during 12 years 750,000 metric tons of crude from the stock of royalty oil belonging to the Rumanian state. Payment was to be made in French francs, the basis of which was the dollar. Of the total annual payment of about 1,500,000,000 francs, 1,000,000,000 were to be assigned for the payment of military supplies ordered by Rumania in France and the balance was to be entered in a collector account. First deliveries for exportation to France were made in May, 1936, and settled for three months later. By the end of 1936, payments totaling 33,100,000 francs had been made of which 24,200,000 had been allotted for armaments.

During 1937, a report shows crude oil deliveries to France to have totaled 122,155 metric tons valued at 23,695,806 francs while 39,855 tons of gasoline accounted for another 15,149,719 francs of value.

In the recent negotiations it was arranged that of the total of 750,000 tons of crude, the Rumanian state will sell, largely to Rumanian refineries, 700,000 tons of oil and export to France only 50,000 tons.

Venezuelan Production Still On the Downward Trend

Crude oil production suffered another decline in Venezuela during February for the second consecutive month, but last month's output was more than 60,000 bbls. per day greater than registered in the same month of 1937. Total production for last month is estimated at 13,572,947 bbls., daily average of 484,747 bbls.

The January estimate on Venezuelan crude production was 15,103,985 bbls., a daily average of 487,225 bbls. However, February, 1937, output totaled only 11,818,626 bbls., a daily average of 422,094 bbls.

VENEZUELA CRUDE PRODUCTION

	February 1938	February 1937	Dly. Au.-Fb. 1938
By fields—			
Lagunillas	5,697,263	6,613,357	203,473
La Rosa-Ambrosia	2,367,485	1,717,042	84,553
Quiriquire	1,917,773	2,009,360	68,492
Tia Juana	1,679,310	.....	59,975
Mene Grande	1,013,687	856,200	36,203
Tarra	361,209	229,500	12,900
Cumarebo	197,353	194,848	7,048
Pedernales	139,340	53,663	4,977
Concepcion	74,280	99,209	2,653
La Paz	68,323	7,700	2,440
El Mene	56,924	62,356	2,033
Total	13,572,947	11,818,626	484,747
Total Jan. 1938	15,103,985		
Dly. avg. Jan. 1938	487,225		
By companies—			
Lago Petroleum Corp.	4,343,971	4,145,232	155,142
Venezuela Oil Concessions	3,444,584	2,655,700	123,020
Standard of Venezuela	2,563,234	2,644,929	91,544
Mene Grande Oil Co.	1,740,000	1,176,000	62,143
Caribbean Pet. Co.	1,013,687	856,200	36,203
Colon Dev. Co.	361,209	229,500	12,900
British Controlled	56,924	62,356	2,033
North Ven. Pet. Co.	49,338	48,709	1,762
Total	13,572,947	11,818,626	484,747

El Centro, Colombia

ENGINEERING and OPERATING

In This Issue

UNUSUAL FEATURES INCLUDED IN BILLINGS FIELD GASOLINE PLANT
By D. H. Stormont ..... *Page 32*

A new natural gasoline plant was recently completed in the Billings field of Oklahoma in which several practices differing from those employed in ordinary gasoline plant operation were placed in use. All process equipment is of latest design and the plant is almost entirely automatic in operation. Extensive precautions are employed throughout the plant to make its operation as safe as possible.

OPERATING IDEAS ..... *Page 37*

Unusual engine-driven generator units used in pipe line station. Shutters on diesel tractor for controlling engine temperature. Measuring line used as paraffin scraper. Oil treater housed to cut heating cost.

FUEL OIL BURNER LABORATORY OPERATED BY STANDARD OF INDIANA
By F. K. Ovitz and J. G. Nellis ..... *Page 39*

Since fuel oil consumed for heating and power in this country approximately equals the volume of gasoline consumed, the job to supply this demand has become a major item in refinery operation. In the interest of uniformity refiners have adopted strict tests and specifications. Here is described the testing laboratory of Standard Oil Co. (Indiana) and various tests used to check the oils.

NECESSITY FOR UNIFORM WELL SPACING AND RATABLE PRODUCTION
By A. M. Crowell ..... *Page 42*

Studies made of the Panhandle gas fields have revealed that gas withdrawals have been non-uniform and that preventable drainage has taken place. The author points out that neither uniform well spacing nor ratable production will bring about a greater recovery of gas when used alone, but when combined will result in the greatest practical recovery. Several court rulings on gas disposal are cited.

QUESTIONS ON TECHNOLOGY—*By C. K. Francis, Ph.D.* ..... *Page 53*

Aniline point determination for analysis of hydrocarbon liquids. Wisconsin law relating to inspection of petroleum products. Removing hydrogen sulfide from sour gas with alkaline wash. Octanes separated from Oklahoma petroleum. Salt present in crude oil and its removal.

PROBLEMS FROM READERS—*By L. G. E. Bignell* ..... *Page 54*

Marginal well allowables in Texas. Formula for determining amount of stretch in string of tubing. Recovering gold from sea bottom by drilling and pumping. Bibliography of geology of Cuba.

Unusual Features Included in Billings Field Gasoline P

By D. H. STORMONT

Development of deeper production in the Billings pool of Noble County, Oklahoma, during the past 18 months caused a considerable volume of natural gas to be available for processing so that as a result, four major oil companies operating in that field constructed and recently placed in operation a jointly-owned natural gasoline plant. The plant is operated by Continental Oil Co.; Phillips Petroleum Co., Shell Petroleum Corp., and Tide Water Associated Oil Co. being the three other joint-owners.

For the time being, the plant is processing some 5,000,000 feet of gas daily, but the absorption side has a capacity of 20,000,000 feet daily and sufficient engine capacity was installed to handle 10,000,000 feet. Thus when the field's daily allowable is increased, and as new wells are brought in, the plant will be able to process much larger volumes without making any changes. Equipment for gas repressuring was also included in the plant, although at this time the project is not yet under way.

Modern Features

Several features, new or different from practices ordinarily followed in natural gasoline plant operation are incorporated in the plant. Control of the operations is almost entirely automatic and all process equipment is of modern design. The plant was designed so that it is very compact in layout, all units being arranged so as to be easily accessible. Electrically-operated alarms installed at several points in the gas system sound a warning if the liquid level should become too high and thereby subject the compressors to the danger of receiving a slug of liquid. Such high-level alarms are installed on the intake scrubber, on the high- and low-stage accummulators and on the recompressor suction scrubber. Safety relief valves are installed on all lines thus making operation of the plant as safe as possible.

TABLE 1—TYPICAL ANALYSIS OF COMPOSITE GAS

	Volume (per cent)
Methane	57.43
Ethane	12.78
Propane	15.19
Butane	9.36
Pentane	2.52
Hexane	.80
Air	1.92
Acid gases	0.00
Total	100.00

Another modern feature of the plant is the use of an indicating potentiometer. By use of this instrument, it is possible to determine the temperature at any of 12 different points in the absorption and stabilizing cycle, all being done by merely turning the switch to the desired point on the instrument. Thus, operation of the plant is greatly simplified and work of the operator made easier. Among the points to which the potentiometer is connected are rich oil to still from the preheater, rich oil out of heat exchangers, gas into the absorber, rich oil out of the absorber, temperature of the water in the hot and cold sections of the cooling tower, and raw gasoline out of the cooling tower to the dewatering tank. Also installed on the board are recorders for the lean-oil pressure, steam pressure and exhaust steam pressure of the stabilizer. The board is located in the pump room for the convenience of the operators.

The cooling tower is of the induced-draft type, of Parkhill-Wade design, and is partitioned into two separate sections, a "hot" side and a "cold" side. Each section has its own water circuit and all streams to be cooled are first passed through the "hot" side and then through the "cold" side of the tower. Cooling in the hot section is accomplished by evaporation, due to the high temperature gradient, while in the cold section the heat is dissipated mainly through sensible heat rise since the temperature gradient is much smaller.

Cooling Water Pumps

The cooling water pumps used in lifting the water over the tower are housed in the same building as the lean- and rich-oil pumps and control board. At present, a 1,000-hp. steam turbine, operating at 1,800 r.p.m., is used as a prime mover. This is direct connected to two 8-inch centrifugal water pumps which feed 1,650 gallons per minute to both the hot and cold sections, and to a third 8-inch centrifugal supplying cooling water to the compressors.

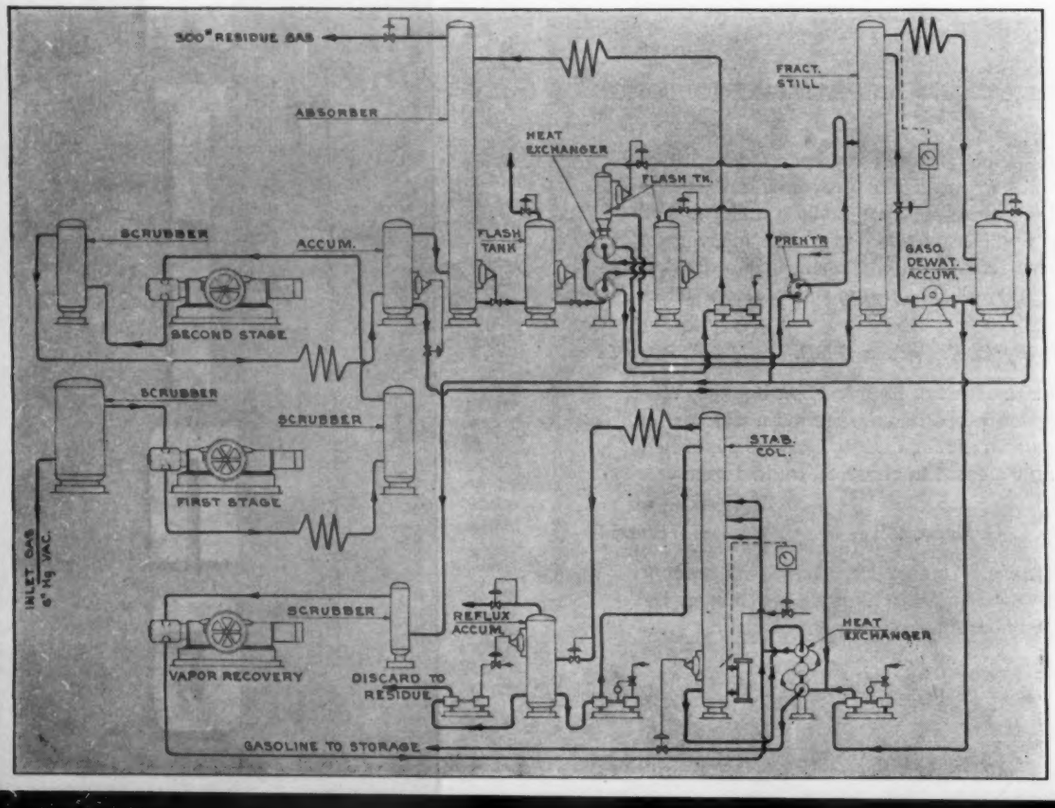
In addition to this unit, an identical installation is used as a stand-by, operated on high-pressure residue gas. However, when more residue gas becomes available the situation will be reversed; the steam-driven pump will be used as a stand-by and the gas-driven pump will be placed in regular operation. This will, of course, serve to reduce the amount of operating steam required.

The cooling water supply for the high-compression cylinders is operated as a closed system so that practically no make-up water is required. Water from the engines is run to a sump where it is picked up by the jacket-water pump. It is first pumped through the hot section of the tower and then through the cold side back to the compressors. In this way very little water is lost by evaporation.

In general, operation of the plant is conventional with two-stage compression being employed. Nine 225-hp., four-cycle gas engines are used, the gas being compressed to 37 pounds gauge pressure in the first stage and to 300 pounds in the second stage. Approximately 2 gallons of 26-pound natural gasoline per 1,000 feet are being recovered. A typical analysis of the composite gas being charged to the Billings plant is shown in Table 1.

A novel method of filtering the oil used to

Fig. 1—Simplified flow diagram of the Billings plant

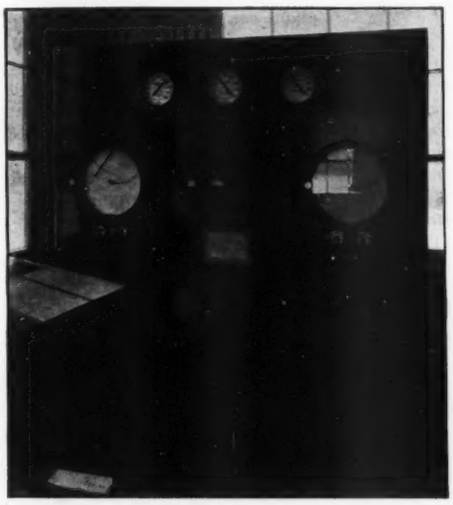


in New Plant

Pumps used in lifting cooling water over the tower and for supplying compressors with cooling water. The unit at the right is driven by a steam turbine and the installation at the left, operated by a high-pressure gas turbine, is used as a standby

lubricate the nine compressor units is in use at this plant. Instead of each unit being equipped with individual filters and oil pumps, as is the usual practice, used oil from all the units is combined and handled in one filtering and supply system. This is accomplished by means of a 4-inch header running the length of the engine house in front of the compression end of the units.

Dirty oil from the engines flows into this header and is run to a settling basin. Two of these basins are provided, flow of oil being regulated by means of a three-way valve, so that the stream can be turned into one or the other as desired. Each sump is of sufficient capacity, approximately 200 gallons, to allow a portion of the oil to be settling out while the remainder is being used. Thus water and the heavier contaminating fractions settle to the bottom of the vessel and are removed from the system by periodic cleaning.



The control panel is located in the pump room for convenience of the operators

From the basins the oil is pumped through two filters, in series, to an overhead reservoir. This is accomplished by a small pump operated by low-pressure discharge gas from the compressor. A hand-operated pump is also provided in case the supply of low-pressure gas is interrupted. The suction lines in the sumps are adjustable in height so that suction is always taken from near the top of the fluid level. From the reservoir the oil flows back to a 4-inch header in front of the engines and to the individual units through 1½-inch lines to complete the oil cycle.

Operation of the system is entirely automatic, the reservoir being equipped with both high- and low-level controllers which operate mercury switches connected to the pump. Thus whenever the height of oil in the reservoir falls to a predetermined level, the low-level controller actuates the switch to start up the pump. The pump then continues to operate until the high-level controller shuts it down.

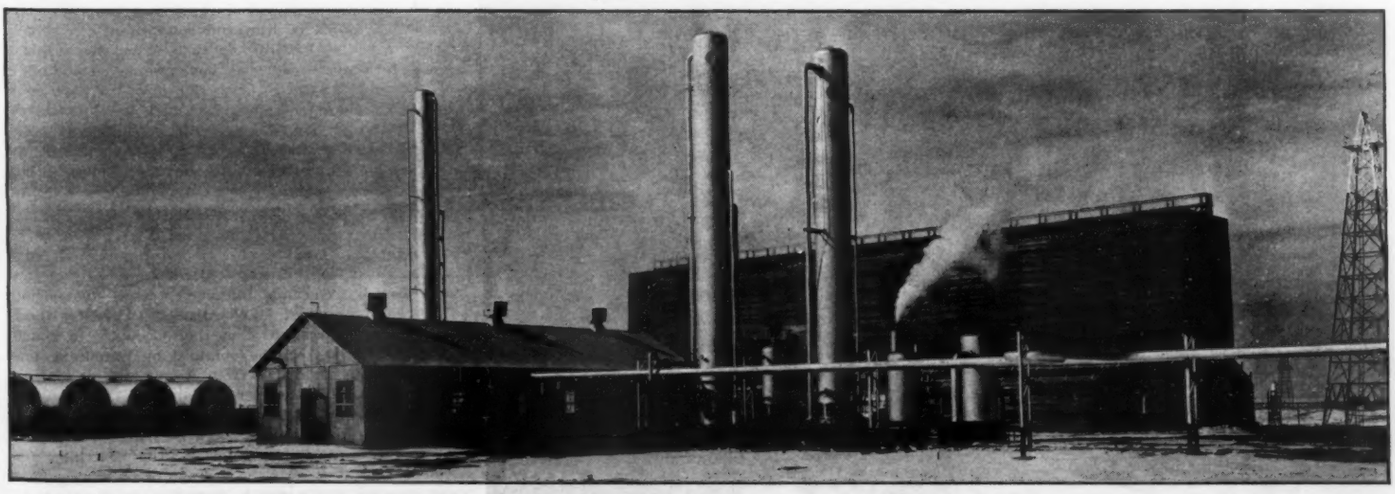
A simplified flow sheet of the plant is shown in Figure 1, in general the flow being as follows:

Incoming gas from the wells is led to the plant through two 16-inch field lines at an intake vacuum of 6 inches mercury. The two field lines "Y" into an 18-inch line leading to the incoming gas scrubber. Here entrained crude, water and condensate are removed from the gas. As a safety measure the scrubber is provided with a liquid-level controller and high-level alarm to prevent liquid from entering the compressors. From the scrubber the gas passes to a 24-inch header and into the low-stage compressors.

Two-Stage Compression Used

Upon being discharged from the low-compression cylinders at about 40 pounds pressure, the gas is passed through the two sections of the cooling tower, where the gas temperature is lowered to about 80° F., and into the low-stage accumulator. Practically no gasoline vapors are condensed in this cycle, so that the liquid drawn off in the accumulator is almost entirely water. The gas is then boosted to a pressure approximately 300 pounds in the high-stage cylinders, again cooled to about 80° F. and then run to the high-stage accumulator. The accumulator is equipped with a liquid-level controller so that any heavy gasoline fractions condensing at this point are removed through a 1-inch line, rejoining the gasoline stream from the still before entering the stabilizer.

Entering the base of the absorber, operated at 300 pounds pressure, the gas is scrubbed with absorption oil and ascends the tower countercurrent



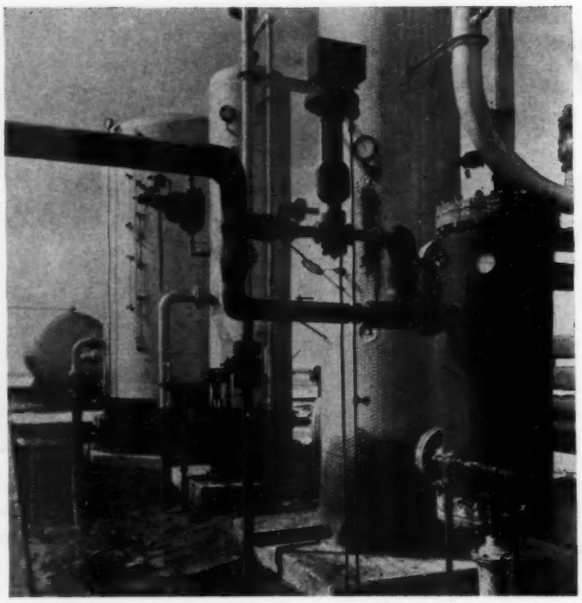
One of the plant's features is its compactness. The pump house and towers are centrally located with respect to the engine house, boiler house and cooling tower, thereby greatly reducing the amount of walking required

to the lean oil. Gas from the top of the tower is passed through scrubbers to remove entrained oil and is then used as fuel for lease purposes. The rich oil accumulates in the base of the tower, where it is removed by an automatic liquid-level controller. Approximately 8 gallons of lean oil per 1,000 feet of gas, 1,600 gallons per hour, is pumped over the tower. No surge tank is needed for lean oil since sufficient oil is kept in the base of the stripper.

Rich oil removed from the absorber base is flashed in a weathering tank, operated at 150 pounds. Vapors flashed from the oil are passed through a regulator and burned as fuel. The oil is removed from the tank by a liquid-level controller, passed through the intermediate shell-and-tube exchangers heated by lean oil from the still, through the preheater and into the still. A pressure of about 40 pounds is maintained on the still and a tower-top temperature of about 180° F. Gasoline vapors leaving the still are condensed and accumulate in a gasoline dewatering tank near the base of the tower. Control of the tower-top temperature is accomplished by pumping sufficient reflux from the tank back over the stripper. Stripping is accomplished by exhaust steam, the lean oil accumulating in a large reservoir in the base of the tower. The lean oil, having completed its absorption and distillation cycle, is passed through the intermediate heat exchanger, through the cooling tower and back to the absorber.

A pressure of 30 pounds is maintained on the dewatering tank so that some light vapors are given off. These pass out the top of the tank through a flow regulator and are run to the recompressor, passing through an accumulator where entrained liquids are removed. Unstabilized gasoline leaving the dewatering tank is joined with the streams from the recompressor and from the high-stage accumulator, picked up by the stabilizer feed pump and passed through shell-and-tube heat exchangers to the stabilizer.

The stabilizer is designed for a working pressure of 350 pounds and contains 30 bubble trays on an 18-inch spacing. A temperature of 292° F. is maintained on the tower bottom and about 140° F. on the top, both of which are recorded. The reboiler is of the external vertical-tube type, operating on exhaust steam at 100 pounds pressure. The stabilizer control is of Stearns-Roger design and is so arranged that only the amount of reflux required for the column is condensed, the remainder of the overhead vapors going to fuel. This is accomplished by a by-pass valve, controlled by the liquid level in the reflux tank, which regulates the volume of vapors to be condensed and that to be discarded. Thus, if the condenser is making too much reflux, more of the overhead vapors are allowed to by-pass. Or, if not enough reflux is being made, more vapors are passed to the condenser.

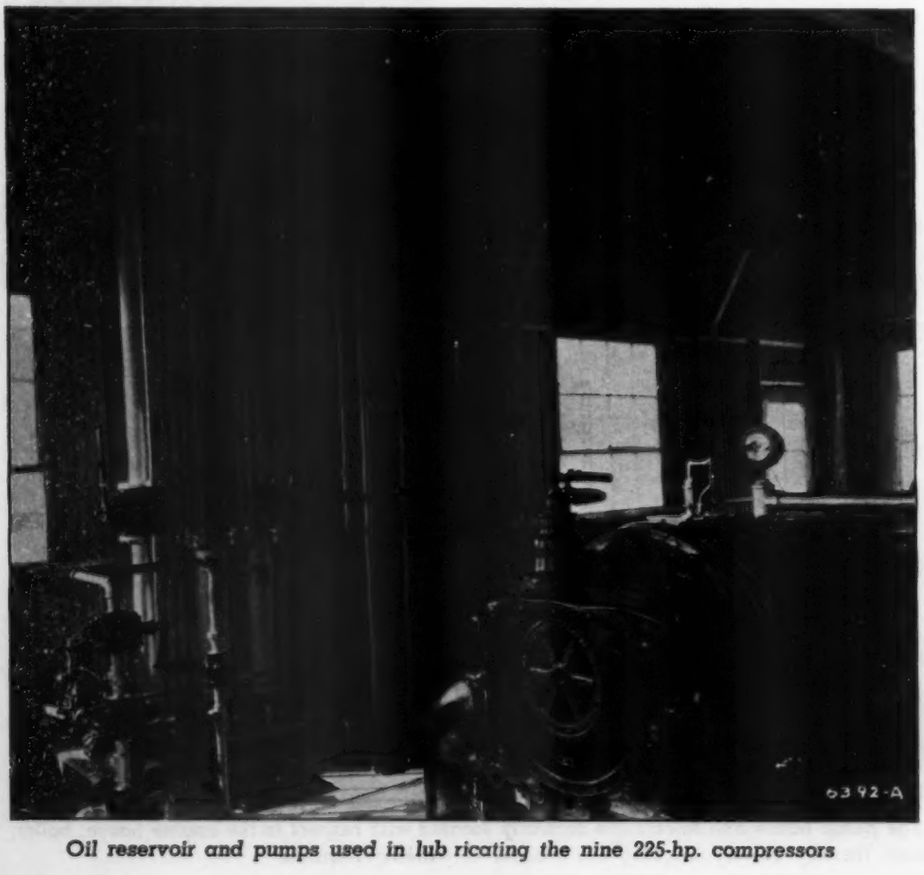


Arrangement of the external reboiler, stabilizer and reflux accumulator

The portion of the overhead stream going to reflux is cooled and run to the reflux accumulator, where it is picked up and pumped back over the tower by the reflux pump. Vapors vented from the reflux tank join those from the stabilizer overhead and are burned as fuel.

Stabilized gasoline is withdrawn from the base of the tower, run through the intermediate heat exchanger, cooled and run to storage. The plant's output of natural gasoline is purchased by Continental and pumped through a 26-mile 2-inch line to its refinery at Ponca City. Therefore, only the comparatively small amount of 100,000 gallons storage is required at the plant.

Steam-generating facilities in the plant consist of three 300-pound working pressure, oil-field type boilers. Electric power is generated by a steam-turbine, three-phase, 15-kilowatt, 440-volt generator. The voltage is stepped down to 110 volts for normal plant usage. Floodlighting is provided throughout the plant yard by elevated lights so that night operations are easily carried on. The plant was designed and constructed by the Stearns-Roger Manufacturing Co., Denver, Colo., and Parkhill-Wade, Los Angeles, Calif.



Oil reservoir and pumps used in lubricating the nine 225-hp. compressors

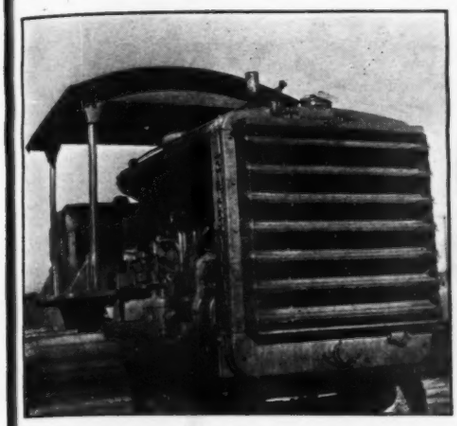
Buying of Thermocouple Wires Simplified Through Tables

Purchase of satisfactory thermocouple wire by users of high-temperature measuring instruments will be made more certain through the use of tables giving the properties of thermocouples made of copper-constantan and iron-constantan, recently prepared by William F. Roeser and Andrew I. Dahl of the National Bureau of Standards, Department of Commerce. This work is important because a large and constantly increasing proportion of temperature measurements, upon which the success of so many industrial processes depends, are made by means of thermocouples, and of these by far the greater part utilize wires of iron and constantan, the latter being an alloy of about 55 parts copper with 45 parts nickel.

The manufacturer of the recording instrument may have constructed his product to suit the characteristics of a stock of iron and constantan wire which he happened to have at the time. When the original stock is exhausted, he may have trouble in obtaining a new supply with the desired properties. Each user of a pyrometer, therefore, has had the problem of finding a source of supply which could furnish the same kind of material he had in the beginning. As methods of wire manufacture have developed it has become increasingly difficult to obtain the kinds of wire made years ago.

After making measurements on a large number of representative samples of iron constantan, and copper obtained from sources which experience indicates will probably continue uniform, Messrs. Roeser and Dahl have prepared standard tables showing these properties, so arranged that thermocouples to match these new tables can be obtained by combining materials readily available from a number of sources. The new table for copper-constantan is the same as one of those now in use, but none of the existing tables for iron-constantan could be matched accurately by readily available materials. The new table for iron-constantan is near the average of previous tables, and does not differ greatly from the one most widely used. Actually, most of the couples sold to match this old table really are a better match for the new one.

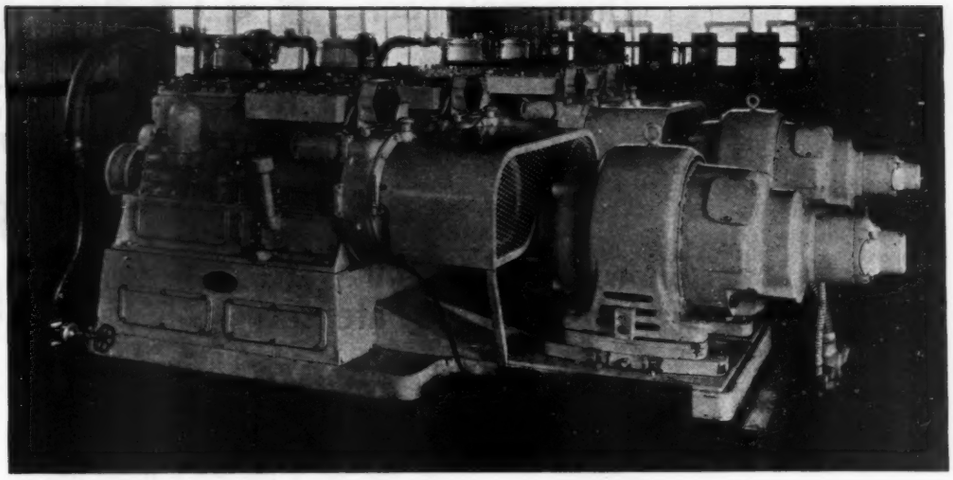
OPERATING IDEAS



Shutters on Diesel Tractor

In order to maintain proper engine temperatures in almost any weather, a contractor operating several diesel tractors in West Texas has installed shutters on the radiators. These shutters operate from the driver's seat so that he may watch his temperature gauge and adjust the shutters to maintain the optimum engine temperature. Sudden drops in temperature are not uncommon in this section of Texas so that the installation of the shutters has proven entirely worthwhile.

Unusual Generator Units in Pipe Line Station



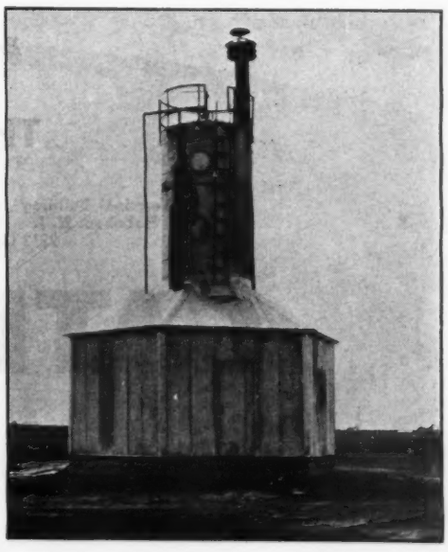
A major gas company operating in the Panhandle of Texas recently installed a new booster station on its 18-inch line running from Shamrock to Petrolia, Tex. In the station two generating plants were installed for furnishing power to electrically-driven pumps and for lighting the station and camp. Each unit consists of two gas engines directly connected to a generator by a vacuum clutch. In the daytime when the load is light only one engine is required to operate the generators, but when the load increases the second engine automatically cuts in. This makes a very flexible generating unit, operated at a nominal cost. The two generators are rated at 60 kw. each. Note the compactness and short height.

Measuring Line Used as Paraffin Scraper

Several companies operating hydraulic pumps in the Oklahoma City field and using two strings of tubing find it necessary to clean the smaller string quite frequently, due to the large quantity of paraffin present. They have found that the simplest way of accomplishing this task is to run the scraper on the measuring line, as is shown in the accompanying photograph. The measuring line reel may be operated by hand, as is shown here, but in many cases a power take-off on the pumper's car is belted to the reel in order to speed up the operation. The extent of load determines the extent the light wire may be used in this service.

Oil Treater Housed

In order to cut the heating cost and help maintain an even heating temperature on its treating tank, one oil company operating in western Kansas has built a six-sided house around the tank. The lease men use the house as cover during bad weather and for warming themselves in cold weather. A walkway, 3 feet wide, is installed all around the tank as an added safety measure.

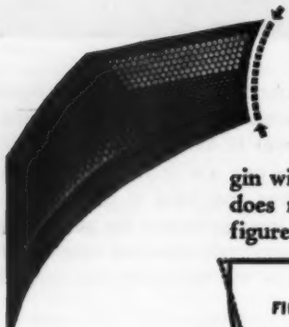


This Simple Fact...

The SHAPE CHANGE in a bending V-BELT

Shows Why You Want V-Belts With the Patented

Concave Side



When *any* V-belt bends around its pulley, the top of the belt is under tension and grows *narrower*. The bottom, under compression, *widens*. A a result of these two changes, the sides of the belt *bulge out*. If the sides were *straight* to begin with, they are now forced into a shape that does not fit the sheave groove—as shown in figure 1, below.

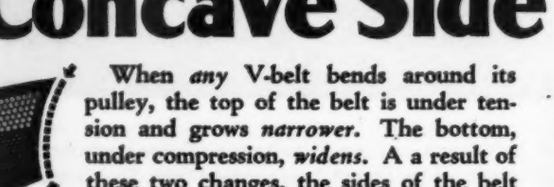
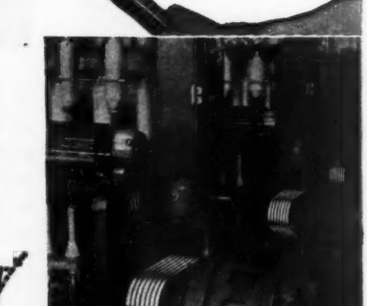


Figure 2 shows how this shape change is corrected by the patented *concave side*. The top narrows, the bottom widens—but there is no side-bulge. This insures uniform side-wall wear which means *longer life*. Moreover, the full side-width grip on the pulley carries heavier loads without slippage; which saves belt wear and also saves power!

The Gates Vulco Rope is the only V-Belt built with the patented concave side.



Engineering Offices and Stocks in All Large Industrial Centers

THE GATES RUBBER COMPANY

Factory Branches

Terminal Building
Hoboken, N. J.

1524 So. Western Ave.
Chicago

741 Warehouse St.
Los Angeles

2213 Griffin Street, Dallas

999 South Broadway, Denver

GATES VULCO ROPE DRIVES

Oil Burner Laboratory Operated by Standard Oil of Indiana

By F. K. OVITZ and J. G. NELLIS
Standard Oil Co. (Indiana)

Fuel oil used for heating and power in this country approximately equals the volume of gasoline consumption. The amount consumed for heating buildings is the largest single use of fuel oil and during 1937 domestic and distillate burners alone consumed over 100,000,000 bbls. Supplying this demand has become a major item in refinery operation. Formerly no special products were refined for domestic heating and the consumer selected his fuel from various products which were available for other uses. This resulted in lack of uniformity and unsatisfactory operation of heating equipment, which created a demand for more uniform fuels of high quality. Today this demand in rapidly increasing quantity is being met by the refiner with fuels manufac tured to strict specifications for different services.

The performance of heating oils is difficult to predict from the usual inspection tests; two fuels with practically the same distillation range may burn quite differently in a given installation under the same draft conditions and air-fuel ratio. Such apparent discrepancies make the task of setting general specifications difficult and indicate the need for fundamental information on the properties which affect the performance of heating oils.

Much laboratory testing, as well as road testing, has and is being done to determine the properties of gasoline required for successful operation of the automotive engine. The results of this test work have built up a background of valuble information for the refiner and engine designer which has contributed greatly toward the present remarkable performance of the automobile. Until comparatively recently, practically no similar laboratory testing was done to study the performance of heating oils in the equipment in which they are used. However, this is now being obtained in laboratories specially equipped for this purpose.

In order to obtain reliable information on the burning of heating oils, Standard Oil Co. (Indiana) established a laboratory with the necessary testing equipment to study such oils under controlled burning conditions. It is equipped with three cast iron steam boilers (Figure 1) of the type and size that are commonly found in homes for domestic heating. One is of the conventional round type, another is a square sectional boiler, and the third a water tube boiler. Each installation is provided with a 300-gallon fuel tank to mix and store oil, a 12-inch diameter gauging tank for more accurate measurements during efficiency tests, and a calibrated graduate with which the oil rate may be quickly determined (Figure 2). Steam produced goes through a steam separator to remove entrained moisture, through a throttle valve which is set to maintain the desired pressure and to a water-cooled steam condenser. Two calibrated water tanks of 650 pounds capacity (Figure 3) are placed under the condenser into one of which condensate from the coils drains. The second water tank is connected to a pump which forces the feed water through an automatic boiler feeder to the boiler. The boiler flue is connected to a 35-foot stack with an interposing damper and constant draft regulator.

The American Society of Heating and Ventilating Engineers Code for Testing Steam Heating Boilers Burning Oil Fuel is followed as closely as possible in arranging sampling points and temperature measurements to be used in determining heat balances. Stack, furnace, and brick temperatures are obtained by means of thermocouples connected to a recording potentiometer while air and feed water temperatures are measured with glass thermometers. Overall boiler efficiency is determined from the weight of the condensate delivered to the calibrated water tank and the heat content of the steam.

Stack loss is calculated from a flue gas analysis obtained with an Orsat apparatus. For a determination of unburnt gases a precision type Orsat (Figure 4), a combustible gas detector actuated by catalytic burning over a heated platinum wire, or a combustion train is used. Radiation and unaccounted-for losses are determined by subtracting the heat in the steam and stack loss from the heating value of the oil burned.

A number of burners are available which are representative of the pressure gun, air atomizing gun, vertical and horizontal rotary cup atomizing, vertical rotary wall flame and vaporizing pot types with regular or insulating fire brick to install in the boilers. It is obviously impractical to test all of the burners made by the 350 or more manufacturers, but it is possible to select the principal types of burners used in the territory where the oil is sold.

Auxiliary equipment consists of a vacuum cleaner for collecting heating surface deposits (Figure 5), a time switch with which to operate the burner intermittently at any desired on-and-off periods, and laboratory apparatus for complete oil inspection. Facilities are also available for any special chemical analyses.

In addition to the equipment for testing oils used in central heating plants, room is provided for range and natural draft pot type space heaters. Much of the same laboratory apparatus is used for testing these burners and in addition metal temperatures of the vaporizing plate or pot are measured with thermocouples and potentiometer. Other equipment includes facilities for studying the performance of fuels for gasoline pressure appliances and the quality of illuminating oils with standard lamps and special smoke point lamps.

After a domestic burner has been installed in accordance with the manufacturer's instructions, its characteristics are thoroughly investigated with respect to limitations of oil rate, draft, CO_2,

Fig. 1—Installation of boilers and burners used for testing domestic heating oils.

Fig. 3—Steam condenser and condensate tanks with feed water pumps

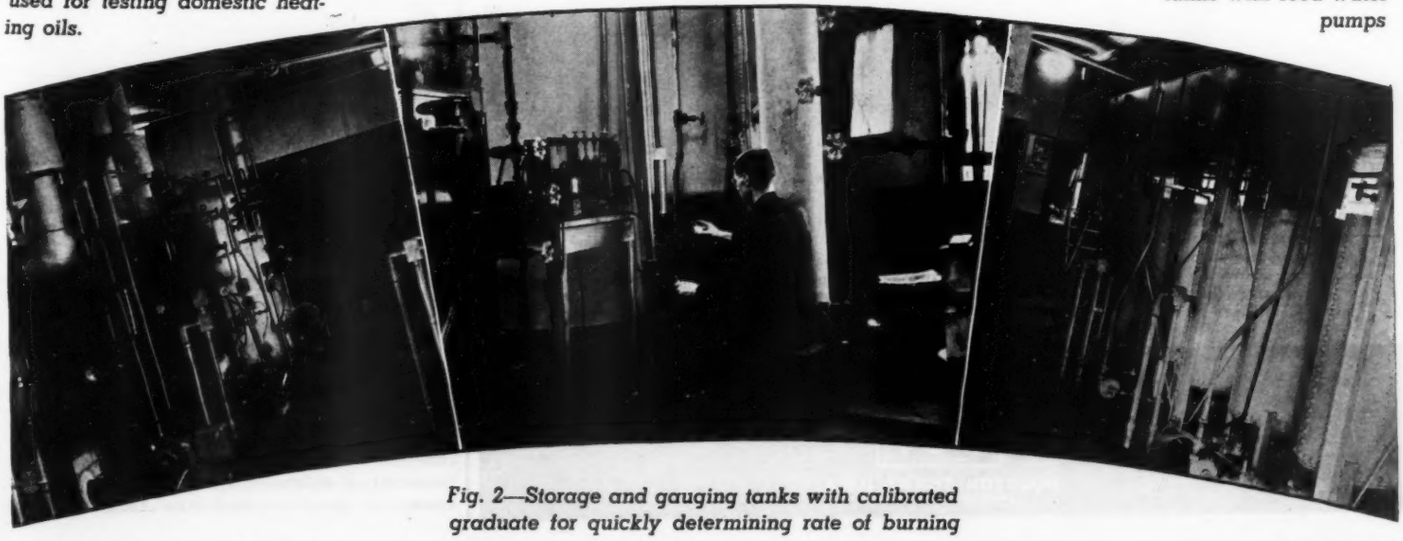


Fig. 2—Storage and gauging tanks with calibrated graduate for quickly determining rate of burning

viscosity, and any other special feature that appears warranted. Oils from various crude sources as well as from various refining processes are secured and split up into fractions from which test oils may be made with any desired gravity, initial and final distillation points, viscosity, carbon residue, and chemical nature. These oils then are burned under controlled conditions at near the optimum setting, as well as near the upper and lower limiting conditions.

After a definite oil and burner setting has been selected, a test is started with a clean boiler and burner. As soon as the boiler reaches equilibrium temperatures the overall efficiency is determined by means of an evaporation test and sufficient data are collected to determine a heat balance. During longer runs several such heat balances are obtained. A record is maintained of the temperatures and notes are made of furnace and flame characteristics. The selected conditions are held by periodic adjustments, if necessary. After burning the desired amount of oil, the burner is shut down and the boiler allowed to cool. The equipment is then examined for deposits on nozzle, cup, or vaporizing groove, and on screen or other burner parts. Deposits on heat transfer surfaces are collected with a vacuum cleaner, weighed and analyzed. Tests made with intermittent operation in general follow the same procedure.

Range or sleeve type burners are tested by setting them in equipment in which they are normally used and running with various oils until failure occurs, which may be due either to plugging of the oil inlet pipe or to carbonization on the oil plate which disturbs oil or vapor flow sufficiently to impair operation. Metal temperatures are obtained by peening thermocouples in several locations. After completing a test, the burner is dismantled and any deposits found are segregated as to location, weighed, and analyzed. Notes are made with regard to corrosion or pitting of the metals.

With natural draft pot type burners (Figure 6) such as are commonly used in space heaters and water heaters, the procedure is first to determine the effect of oil rate and draft upon metal temperatures, location and characteristics of the flame, carbon deposits in the pot, and soot in the radiating drum, if any is present. The effect of oil viscosity upon oil flow through the control valve is determined, as these burners have a definite minimum and maximum oil rate beyond which excessive carbonization occurs. A special metering device to determine the rate of flow and maintain it constant once it is set, regardless of draft variations, has been found convenient. A definite quantity of oil is burned under controlled conditions and the deposits are collected and weighed to compare with results obtained from oils of different quality.

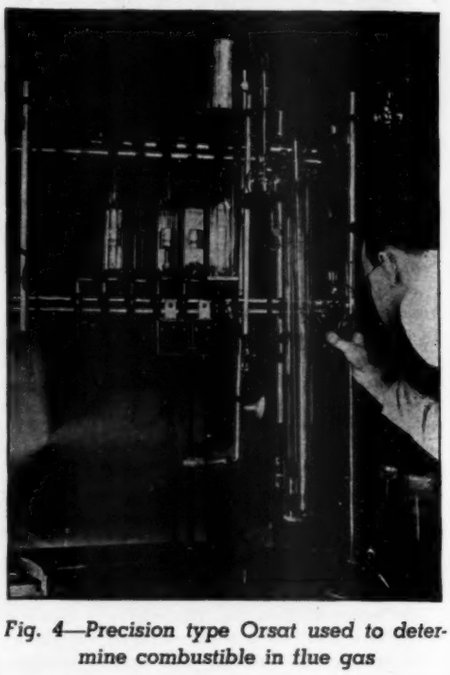


Fig. 4—Precision type Orsat used to determine combustible in flue gas

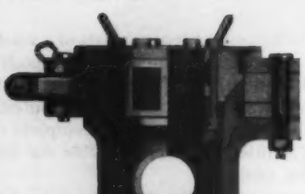
The laboratory burning tests cover a wide range of operating conditions from good to poor such as may occur in actual practice. If a fuel is not suitable for a burner, or if the burner has a narrow range of operating conditions under which it will perform satisfactorily, this will be revealed by the tests. For example, two fuels similar in distillation range and burned under identical conditions in the same burner may show quite different performance. One may burn with a clean flame and leave no deposits while the other may give a smoky flame and carbon deposits on burner parts. Again, it may be found that the same oil burned under identical conditions of draft and air-fuel ratio in two burners of the same type but of different manufacture gives markedly different results.

Primarily, oil for domestic burner service is sold on the basis of automatic trouble-free heating. Deposits on cups, nozzles, vaporizing grooves, or screens disturb the oil flow, atomization, vaporization, or air mixing and ultimately result in service calls and dissatisfaction. Deposits on heating surfaces reduce efficiency and create additional resistance to gas flow which may change the opti-

THERE'S AN

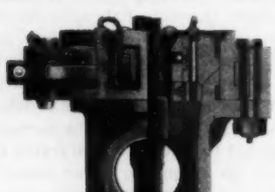
O-C-T BLOWOUT PREVENTER

FOR EVERY NEED!



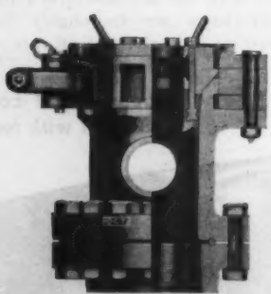
TYPE "D"

The O-C-T type "D" 5000-lb. test pressure Blowout Preventer illustrates the basic principle of design of all O-C-T Blowout Preventers. Its patented design provides a positive seal around any size drill pipe, casing, or tubing . . . either standard or flush joint . . . yet it permits the pipe to be rotated or raised and lowered the length of one joint to prevent sticking.



TYPE "D" WITH STRIPPER

The illustration above shows the type "D" Blowout Preventer equipped with a stripper rubber designed by O-C-T engineers to interchange with regular pack-off rubbers in all types O-C-T Blowout Preventers. It permits tool joints and pipe collars to pass through in perfect safety although there is pressure on the well.



TYPE "HF"

The O-C-T type "HF" Blowout Preventer differs from the type "D" only in that it is provided with a flanged bottom connection. The accompanying illustration shows the type "HF" Preventer bolted to a companion flange with a metal seal ring inserted in grooves provided in both flanges.

TYPE "H"

The O-C-T type "H" Blowout Preventer, for use with O-C-T Tubing Heads in sizes ranging up to 7" OD, permits drilling the plug and running and landing tubing under blowout preventer protection. It is identical in design to all other O-C-T Preventers except that it is not provided with return outlets.

OIL CENTER TOOL CO.
O·C·T
HOUSTON, TEXAS, U.S.A.
CABLE ADDRESS "OCENTOL"

mum air-fuel ratio. While field observations and laboratory tests have shown that improper installation and burner setting are a major cause of deposits, yet oil quality plays a significant part.

When oils from the same source but with a different distillation range are burned, differences in

Fig. 5—Vacuum cleaner used to collect deposits from boiler heating surfaces

burner and heating surface deposits may be correlated with the distillation range and degree of refining. With oils of the same distillation range but from different sources, the difference in deposits obtained may be correlated with the chemical nature of the oil and degree and method of refining. Other measures of heating surface deposits are rise in stack temperature and furnace temperatures during a run, and loss in efficiency. In general, 300- to 450-gallon runs are adequate for determination of burner deposits and 75-gallon runs for estimating the soot-forming tendency of an oil.

Overall boiler efficiency is a measure of the useful heat obtained from the oil. It represents the combined efficiency of burner, furnace and boiler or other heat absorbing equipment. Important in-

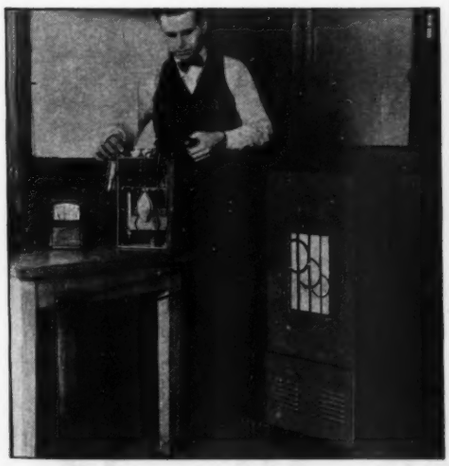


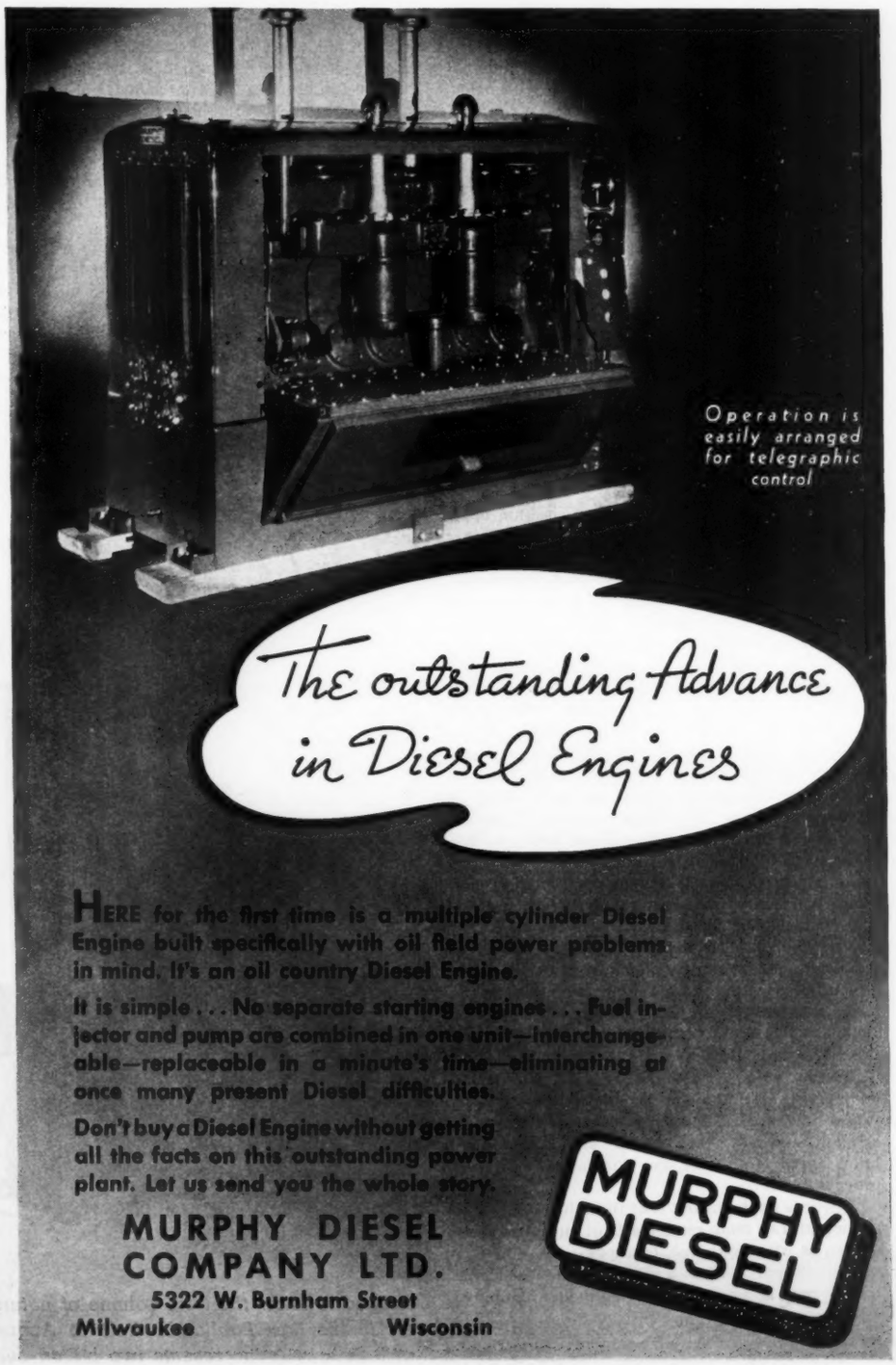
Fig. 6—Natural draft pot burner and equipment used for testing

formation may be gained from a study of heat balances under various test conditions. The degree of perfection of oil preparation and air mixing achieved by a burner is reflected in the minimum amount of excess air that can be used with clean burning, which in turn directly affects overall efficiency. The magnitude of heat loss through brickwork may be appraised from heat balances as well as the effects of burner position in the boiler. While tests with atomizing burners indicate no unburnt gases in the stack with clean combustion, yet when operating beyond the limits of the burner, these losses are indicated in boiler efficiencies.

The criteria for oil for range or sleeve type burners are that the oil must burn with a minimum of cleaning throughout the year, satisfactory ignition, and freedom from odors. Determination of the time that the burner will operate with a given oil before failure is the direct measure of oil quality. Metal and oil temperatures existing in various parts of the burner aid in selecting an oil that will be stable under operating conditions. Deposits in the oil feed pipe are related to the stability of the oil and carbon deposits on the plate bear a relation to the endpoint of the oil and refining method.

Natural draft pot type burners have definite lower and upper critical limits beyond which unsatisfactory operation is obtained. These limits are both a function of the maximum and minimum oil rates and the draft available. Proper adjustment of the high and low oil feed rate through the control valve with a given oil is important. Comparison of carbon and heating surface deposits resulting from the use of definite quantities of various oils with consideration of temperatures existing in various parts of the burner enables a proper oil to be selected for this use.

Field reports are correlated with laboratory tests as a practical aid in establishing oil quality. The pourpoint requirement depends upon winter temperatures and storage tank installation and is best determined from field experience. Trouble from screen deposits may be related to oil stability, care in handling, or cleanliness of customer's equipment.


Operation is easily arranged for telegraphic control
The outstanding Advance in Diesel Engines
HERE for the first time is a multiple cylinder Diesel Engine built specifically with oil field power problems in mind. It's an oil country Diesel Engine.
It is simple . . . No separate starting engines . . . Fuel injector and pump are combined in one unit—interchangeable—replaceable in a minute's time—eliminating at once many present Diesel difficulties.
Don't buy a Diesel Engine without getting all the facts on this outstanding power plant. Let us send you the whole story.
MURPHY DIESEL COMPANY LTD.
5322 W. Burnham Street
Milwaukee Wisconsin
MURPHY DIESEL

Necessity for Uniform Spacing of Wells and Ratable Production

By A. M. CROWELL*

Many legislative measures pertaining to the ratable production of natural gas have been passed in the state of Texas. The important legislative moves are listed in their chronological order:

Common purchaser act, 1931.
Market demand law, 1932.
Sour gas law, 1933.
House bill 266, 1935.
Senate bill 407, 1937.

House bill 266 has given rise to much litigation, a brief summary of which is given at the end of this article. The purpose of house bill 266 is twofold; first, to prevent waste, and, second, to adjust correlative rights and opportunities of each owner of gas in a common reservoir so that he may produce, use, or sell such gas.

Senate bill 407 goes a step further and after readopting the purposes of house bill 266, adds that the production from gas wells shall be prorated so as to prevent cognizable and preventable drainage of gas across property lines.

The railroad commission's gas proration order of November 18, 1937, which was written after it had the opinion of the Supreme Court of the United States to guide it (the Supreme Court said in effect that the commission did have the power to prevent undue drainage of gas), finds that the withdrawals of gas from the East Panhandle field have been nonuniform, disproportionate, and unratable and that cognizable and preventable drainage of gas has, is, and will continue across property lines unless gas is produced ratably among wells. The commission put into effect a proration formula for the purpose of so regulating the production of natural gas, in a reasonable way, as to prevent undue, noncompensated drainage between competing tracts of land and wells, so that correlative rights will be in adjustment. The formula is based to a large extent upon gas in place, as can be seen by the wording of the order in explaining unequal withdrawal:

"By unequal withdrawal, we must mean the withdrawal of a quantity of gas from a tract in excess of, or less than, that amount which bears the same relation to the total withdrawal from the field that the reserve of the tract bears to the total reserve of the field."

The formula is a good one, it is based on sound engineering testimony, and it follows the law. Proration formulas are as subject to argument as religion, however; so we won't go into that. We know there is at least one unbeliever, since the order is in the courts.

There is no doubt but that there has been more gas withdrawn from some tracts of land than from others, as witness the photographs.

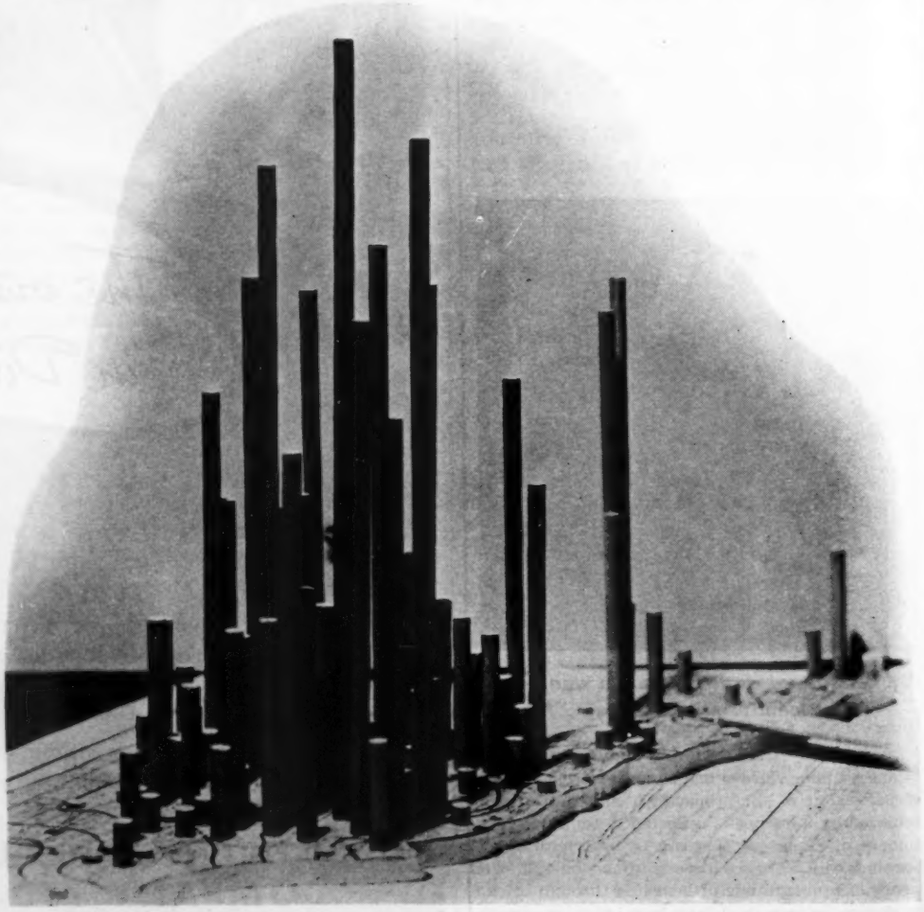
Photograph No. 1 is a picture of the East Panhandle field as taken from a peg model exhibit of the entire Panhandle prepared by railroad commission engineers and designed to show the total volume of natural gas produced by each producing 640-acre tract in the Panhandle field to August 1, 1937. One inch in the height of a peg represents 2,000,000,000 feet of gas produced.

Photograph No. 2 is the same type of exhibit as No. 1, except that it is designed to show the total volume of gas produced by each well in that area covered by parts of Figures 5 and 6.

The disparity in the heights of the pegs—and consequently in the amount of gas which adjoining landowners have been able to produce and sell—is clearly obvious. It might be well to add at this point that the tall group of pegs belong to that one unbeliever who has gone to the court house.

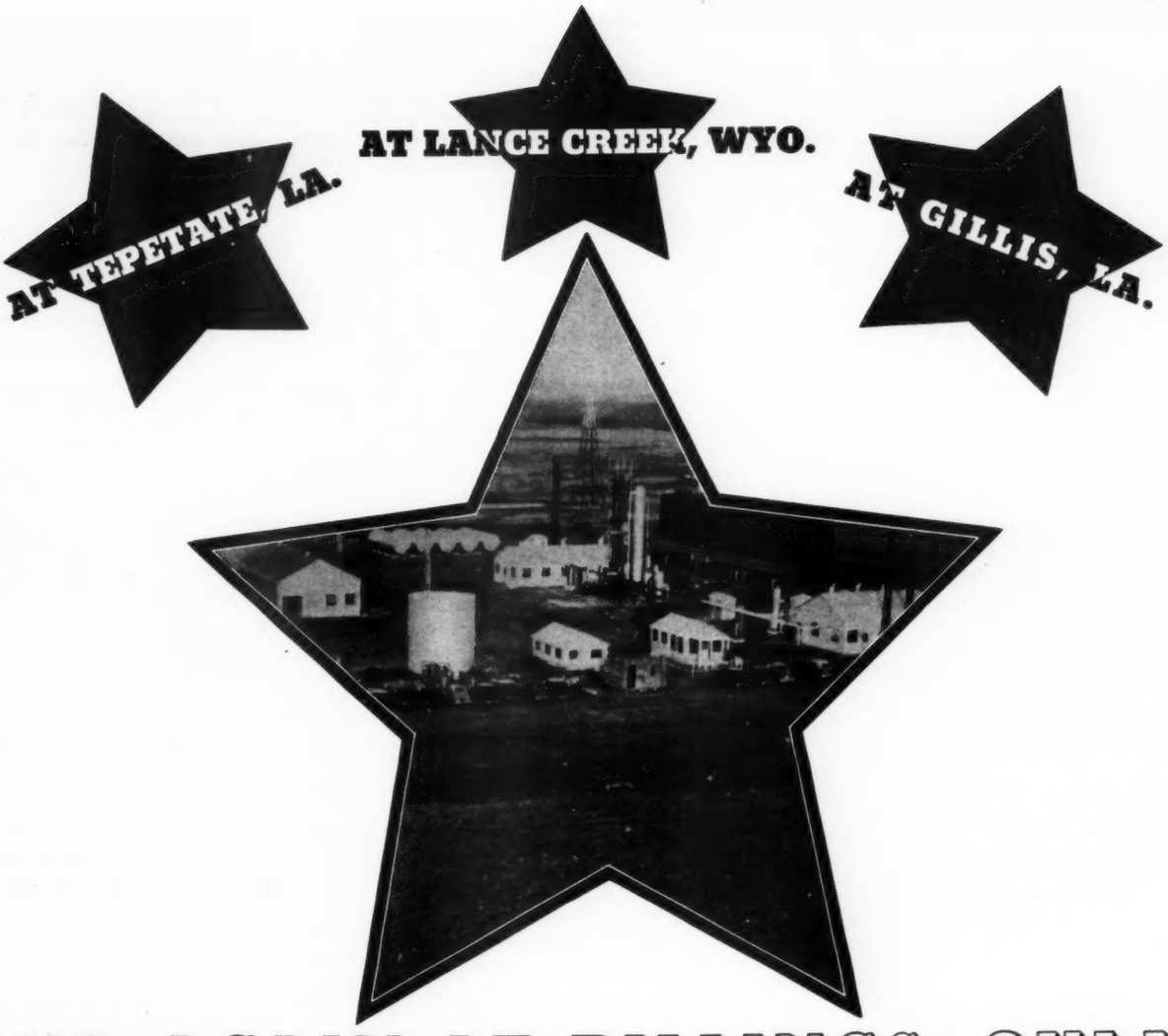
Resistance to flow of gas in any gas reservoir, offered by the sand or formation containing the gas, prevents total recovery by means of the production of gas through wells drilled into the reservoir. In the absence of this resistance all of the gas could be produced through a single well the same as an automobile tire may be completely deflated by a single puncture. The failure to recover 100 per cent of the gas by production from a gas reservoir is the result of a combined effect of such factors as size of the pore spaces through which the gas must travel, size and shape of the sand grains or particles around which gas must flow, and, as well, distance of travel to the well bore. In addition to these fundamental factors there are other factors, such as water encroachment, to cut down the total recovery of gas.

Gas flows through a producing formation only when there is an expansion of gas from a higher to a lower pressure. The rate of flow is a function of (1) distance of travel, (2) frictional resistance in the sand, and (3) energy available from the expansion of gas. We refer to the ease with which gas flows through the reservoir as the permeability of the formation. If the permeability is high there is less resistance than if the permeability is low. The energy made available through the expansion of the gas supplies the motivating force which causes the gas to move in the reservoir a given distance against the frictional resistance therein. This energy is made available by the re-



Designed to show the total volume of natural gas produced by each producing 640-acre tract in the East Panhandle field to August 1, 1937. One inch in the height of a peg represents two billion cubi c feet of gas produced

*Chief conservation agent, Arkansas Board of Conservation, formerly chief gas engineer, Railroad Commission of Texas.



AND AGAIN AT BILLINGS, OKLA.!

The greatest compliment a client can pay any organization is to say —"We want you to do this job, too!" We, therefore, are justly proud of the fact that the Continental Oil Company awarded The Stearns-Roger Manufacturing Company and Parkhill-Wade the contract to engineer, design and erect its new Gasoline Plant at Billings, Oklahoma—as well as selecting us as the engineers, designers and fabricators of its new Gasoline Plant at Gillis, Louisiana; its Gas Pressure Maintenance Plant at Tepetate, Louisiana; and its Gasoline Plant and Gas Maintenance Plant at Lance Creek, Wyoming.

★

NATURAL GASOLINE PLANTS
GAS DEHYDRATION UNITS WITH CALCIUM CHLORIDE, GLYCERINE or DIETHYLENE GLYCOL CYCLES
STABILIZATION PLANTS

★

BUTANE PRODUCTION PLANTS
BUTANE STORAGE AND HANDLING EQUIPMENT
DUST AND LIQUID SCRUBBERS

PARKHILL-WADE
CONSULTING AND CONSTRUCTION ENGINEERS
971 NORTH MAIN STREET
LOS ANGELES CALIFORNIA

AFFILIATED WITH

THE STEARNS-ROGER MANUFACTURING CO.

1720 CALIFORNIA STREET • DENVER, COLO.

duction of pressures at the wells, or outlets, to pressures less than the pressures in the reservoir. As the reservoir pressure declines less energy is available from expansion, and, therefore, gas moves through the reservoir at a smaller rate of flow.

It may be said that the flow of gas through the reservoir is caused by the physical characteristic of the gas which causes it to seek a common pressure level or equalization through expansion, but that the equalization of pressure is retarded by the frictional resistance in the formation.

When we speak of the rate of flow, time is injected and must have serious consideration in determining its effect on the ultimate recovery of the greatest practical quantity of gas. It is the rate of flow involving time which determines the abandonment point of the individual well and eventually of the entire field. In other words, when the rate of flow declines to the extent that the continued operation of a well is not justified, abandonment follows, regardless of the quantity of gas remaining in the reservoir.

Physical Characteristics

We expect the physical characteristics of the sand body causing the frictional resistance of the reservoir to remain substantially the same throughout the life of a field. The energy available from expansion will decrease during the life of a field along with the depletion of the reservoir pressure. The distance of travel of gas through the reservoir to the points of outlet is controlled by the spacing of the wells when drilled. A greater recovery of gas can be made if the wells which are drilled are spaced uniformly over the reservoir.

Figure 1 is drawn to illustrate the reservoir pressure gradients which will result from the production of gas from wells concentrated in the center of a reservoir and which will exist at the time of the abandonment of the field. This example illustrates the way in which the sand resistance causes the pressure to remain progressively higher away from the well in proportion to the distance that the gas must travel.

Figure 2 is drawn to illustrate the pressure gradients which will result in a reservoir from the production of gas from wells concentrated in one corner rather than in the center of a field. This example shows the maximum distance of travel which could be brought about in the spacing of wells.

Figure 3 is drawn for the purpose of comparison to show the advantages in uniform well spacing over the concentrated spacing as illustrated in Figures 1 and 2. It may be seen that well spacing on a uniform basis provides the opportunity for a greater recovery of gas simply because it reduces the distance of travel in the reservoir to the points of outlet. Therefore, a greater ultimate production of gas may be obtained if the same number of wells are spaced uniformly.

Figure 4 is drawn to illustrate the fact that *two or more wells will recover more gas from a reservoir* than will one well, for the reason that the distance of travel of the gas is shortened and the abandonment pressure in the reservoir will be lower.

It is not the purpose of these illustrations to indicate that wells should be drilled in any field in greater numbers than are justified, but on the other hand it is the intention to show the advantage of uniform spacing of wells which are drilled and to show the disadvantage of the production of gas from one or more wells to the exclusion of others, the advantage and disadvantage being in respect to the total recovery of gas from a field.

If the tendency of the reservoir pressure to equalize were such that gas could flow in the reservoir to the wells at more rapid rates than gas is withdrawn, then in that event uniform well spacing and the production of gas from all wells would not be so important in regard to ultimate recovery of gas. The fact is that in the Texas Panhandle field large pressure differentials exist because the sand resistance will not permit the pressure to equalize as rapidly as would be necessary in order to prevent such differences in pressure.

Figures 5 and 6 are drawn to show the pressure differences that existed in various parts of the Wheeler County portion of the East Panhandle field at the respective approximate dates of July, 1935, and July, 1937. The actual gauge pressures recorded at the surface on the various wells shown were plotted to show the material differences that existed in the reservoir pressure in the East Panhandle field as of the dates shown. It is particularly pertinent that the differences shown to exist as of July, 1935, have become more exaggerated as of July, 1937, which is the result of two additional years of unratable production.

Although there is a tendency for the pressure to equalize in the reservoir caused by the expansion of gas from a higher to a lower pressure, the time that would be required for equalization would be greatly affected by the resistance of the sand to the flow of gas, and with the continued production of gas from the field we cannot expect the equalization of pressure during the remainder of its life. The best that may be expected would be a more uniform decline in pressure brought about by a more uniform spacing of future wells and the ratable or equalized production of gas as between wells.

Unless more uniform well spacing and more uniform production of gas are accomplished large quantities of gas will be left in the reservoir at the abandonment of the field which otherwise could be produced and saved.

Figures 5 and 6 show some of the actual pressure differences which are known to exist in the East Panhandle reservoir as of this time and the figures also demonstrate that practically these same differences have existed for at least as long as two years. Other data on the field reflect that such pressure differences have existed in the life of the field for periods much longer than two years. These pressure differences have been caused by the production of gas from the present wells or points of outlet as is illustrated by the photographs. They definitely show that the resistance of the sand to the flow of gas is a material factor in the recovery of gas from the reservoir.

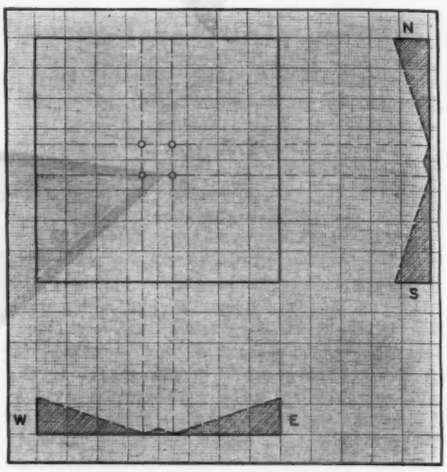


Fig. 1 — Reservoir pressure gradiant with wells concentrated in center

If we knew the pressure differences that will exist at the abandonment of the field we could calculate now with reasonable accuracy the quantity of gas which would be left in the reservoir and lost. It is obvious, however, that if we reduce the pressure differences in the reservoir between the wells, we will ultimately produce more gas from the field.

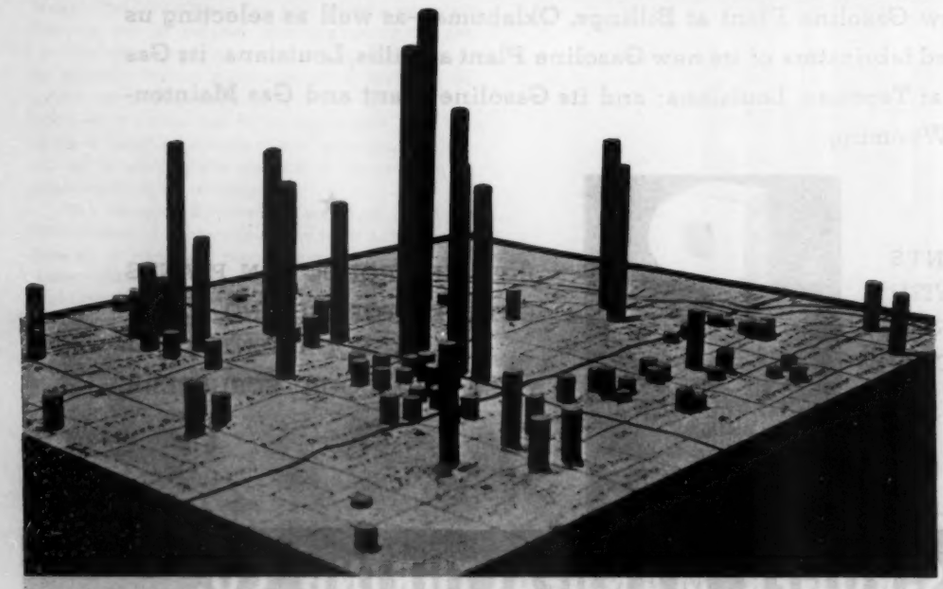
Loss of Gas

The final pressure differences and, therefore, the loss of gas can be reduced if gas is produced to meet the requirements from all wells on a ratable and more uniform basis. Likewise a greater recovery of gas can be made if the future wells are spaced more uniformly over the field.

Some may contend that before the abandonment of the field no such pressure differences as exist now can or will exist then. Certainly that contention must be made if we assume that the reservoir can be efficiently drained without uniform pressure decline. If that be true, we need not be greatly concerned about more uniform production and spacing of wells in so far as they affect the total recovery of gas.

In order that we may determine the relative importance of this issue we must analyze the flow characteristics of a gas sand and show the tendency and the effect of continued unrestricted future production.

Gas flows through the reservoir and can be pro-



Designed to show the desparity of gas withdrawals between wells over the period covered by Figures 5 and 6

Insist on OVER-ALL ECONOMY

DRILLING AHEAD at 5000 feet with "Oilwell" Portable No. 7 Double Engine Drive at Keating Summit, Pa. The first complete rotary drilling rig to be used in Pennsylvania.

3 Jobs: ROTATING CIRCULATING HOISTING

"Oilwell" Triple-Purpose Double-Engine Drive does each with greatest economy

DRIVING the rotary with the large engine needed for hoisting is like driving a tack with a sledge hammer. You waste more power than you use.

"Oilwell" Portable No. 7 Double Engine Drive makes the engines fit the jobs. Two 7¾" x 7" vertical twin steam engines are unit mounted on a portable base. One operates the rotary; the other drives the pump. When maximum power is needed for hoisting, both engines are clutched together. They operate as one powerful unit with single throttling and reversing control. Thus the engines work close to their rated loads and at highest efficiency all the time.

Lever control adjustable cut-offs on both engines permit using the expansive force of steam to the utmost. This effects substantial savings in fuel and feedwater and reduces required boiler capacity.

The cost of this Triple-Purpose-Unit is extremely low in relation to its efficient performance.

Insist on over-all economy. Get it with the "Oilwell" Portable No. 7 Double Engine Drive.

OIL WELL SUPPLY COMPANY

Subsidiary of United States Steel Corporation

Branch Stores in All Oil Fields

"OILWELL"

duced from a well in accordance with the following formula:

$$Q = C\ (P_f^2 - P_s^2)^n$$

(See Bureau of Mines Report of Investigations Serial 2,930, page 3.)

Where

Q = rate of delivery cubic feet.

P_f = absolute working pressure in the reservoir at x distance from the well.

P_s = absolute back-pressure or working pressure in the reservoir at the well.

C and n are coefficient and exponent respectively.

The above formula discloses that the volume of gas which will flow through the reservoir and consequently can be produced is in proportion to the difference of the squares of the pressures in the reservoir rather than the difference in pressures. In other words, the difference in the pressure causes the flow, but the quantity of gas that flows is in proportion to the difference in the squares of the pressures. The difference in pressures that we speak of here is the difference between the reservoir pressure and working pressure at the well while gas is being produced, and has no relation to the difference in reservoir pressures as shown in Figures 5 and 6.

Let us assume now that we are producing a gas well at the rate of 1,000,000 feet of gas per day with a working pressure in the reservoir at the well of 300 pounds absolute and with a working pressure in the reservoir at X distance away from the well of 350 pounds absolute.

As the field is depleted the reservoir pressure will decline. Figure 7 illustrates the increase in pressure difference between the reservoir pressure and well working pressure which will be necessary in order to maintain a certain rate of flow as the reservoir pressure declines. Figure 8 illustrates the decline in rate of production which will be experienced during the life of a well if a constant pressure difference between the reservoir pressure and the well working pressure is maintained.

In order to illustrate the possibilities for the loss of large quantities of gas in the absence of uniform development and ratable production, let us consider the conditions which exist today in the Wheeler County area of the Texas Panhandle field. The conclusions from this study are applicable to a greater or lesser degree in all other portions of the East Panhandle field.

The development in Wheeler County to date has been on a highly concentrated basis in some portions of the field, and other portions of the field have as yet no development. The Wheeler County portion of the East Panhandle field embraces some 243 sections of land, or 155,704 acres, approximately. Of this proven area only 115 sections have one or more gas wells.

There are at present a total of 325 gas wells in Wheeler County area, which vary in concentration from one well to the section to as many as 12 wells to the section (section 53, Block 23, H.&T.C. Rail-

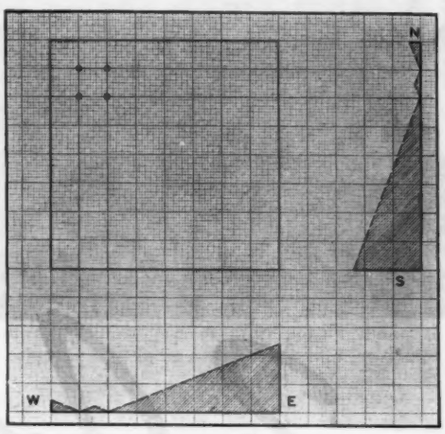


Fig. 2 — Reservoir pressure gradiant with wells concentrated in corner

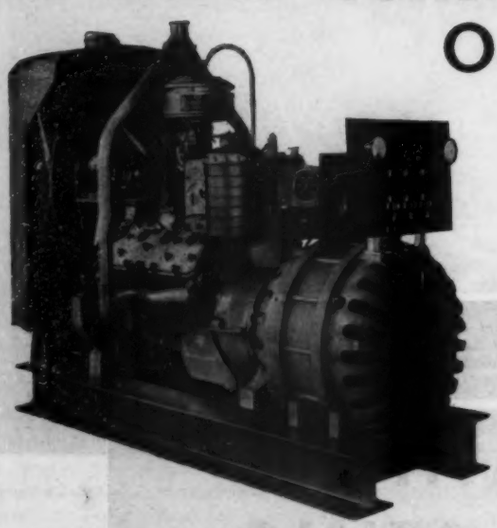
way Co. Survey), and 312 oil and gas wells. The total lease acreage of these 325 gas wells on the basis of 160-acre maximum units is approximately 34,935 acres. If we allow 15,000 acres for the oil area, the Wheeler County portion of the East Panhandle gas field has at this time approximately 105,769 acres (155,704—15,000—34,935) of undeveloped gas acreage; or 68 per cent of the total gas acreage in the county is undeveloped.

In order to obtain the greatest possible recovery of gas from a reservoir we should have all of the wells which are to be drilled spaced uniformly over the reservoir. Then if we have ratable production of gas the reservoir pressure will decline at a uniform rate over the field and no such pressure differences between wells can exist at the time the field is ready for abandonment as are shown to exist today in Wheeler County. In the absence of this pressure difference at the abandonment of the field the total recovery of gas will have been materially greater.

Therefore, any plan of development which will tend to bring about, before abandonment, a more uniform development and any ratable production basis which will tend to bring about in the end a more uniform abandonment pressure will insure a greater production of gas.

It is not difficult to prove that the above statement is true. Considering Wheeler County as a

A NEW Generator for the Oil Industry!

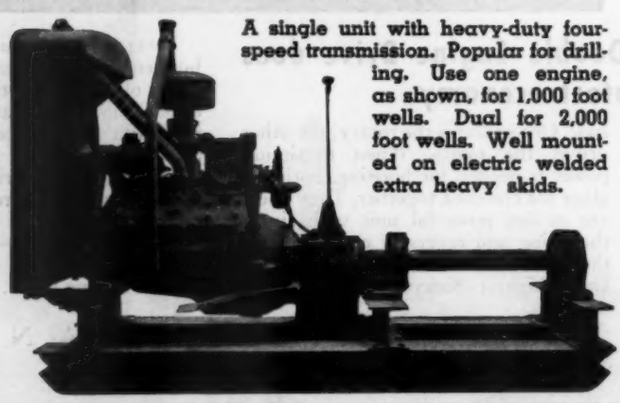


An extremely efficient 20 K.V.A. generator, direct connected to the economical Ford V-8 engine. The engine runs at a speed where maximum efficiency and load is secured. The unit is equipped with voltage regulator and sensitive flyball governor. May be operated either singly or in pairs. Unit may be had entirely enclosed with hood and side panels, and is shipped complete ready to run. Engine and engine parts exchange plan are available from nation wide Ford service. Price for this type of unit is extremely low.

This is an ideal unit for running electrified pumping equipment, lighting oil field camps, drilling rigs and pumping stations, or any similar installation where continuous service is desired.

General Power Oil Field Special

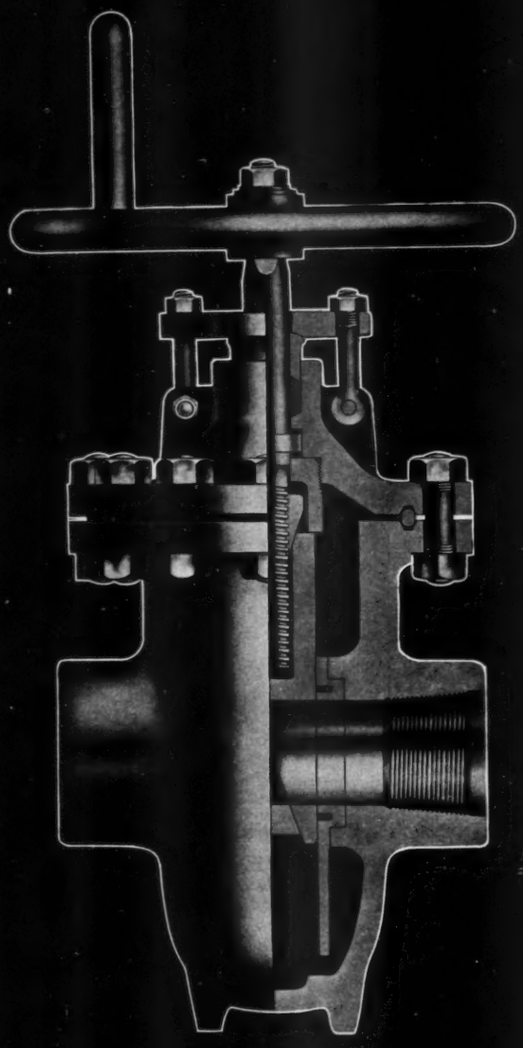
Available in Single, Dual, Triple engine units, these General Power Conversions of Ford V-8 Engines offer the ideal power for DRILLING, PUMPING, and GENERATING.



A single unit with heavy-duty four-speed transmission. Popular for drilling. Use one engine, as shown, for 1,000 foot wells. Dual for 2,000 foot wells. Well mounted on electric welded extra heavy skids.

Write for complete descriptions.

GENERAL POWER INC.
QUAPAW, OKLA.



THE "Tops" IN GATE VALVE DESIGN

Gives you a type for every purpose

It's different!

W-K-M's outstanding achievement in valve design, incorporating those improvements and refinements lacking in conventional type gate valves, is not restricted to a single type. This Through-Conduit Lubricated Gate Valve principle has been applied to the wide scope of gate valve uses including high and low pressure Christmas-tree service, flow lines, manifolds, boiler hook-ups, boiler feed pumps, and general low pressure requirements. Test pressure ranges are from 800 to 10,000 pounds. Four types, covering every gate valve need, are continuously bettering the already top reputation this revolutionary valve has built throughout the oil world.

HIGH PRESSURE STEEL

MEDIUM PRESSURE SEMI-STEEL

LOW PRESSURE IRON BODY

QUICK OPENING TYPE

COSTS NO MORE THAN ORDINARY VALVES

Sold Through Supply Stores Everywhere

W-K-M Company, Inc.

OIL FIELD, PIPE-LINE & INDUSTRIAL EQUIPMENT

HOUSTON, Texas, U. S. A.

Export Office: 74 Trinity Place, New York

Cable Address: "WILKOMAC"

typical illustration, let us assume that there will not be any additional wells drilled and that we must depend upon the present wells to produce all of the gas that will ever be recovered in this section of the Panhandle field and that unratable production continues in the future as it has in the

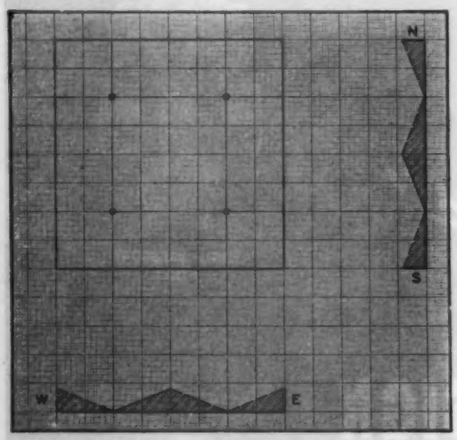


Fig. 3—Illustration of reservoir pressure gradiant with wells spaced uniformly

past. Then in that event we must expect similar pressure differentials to exist in the reservoir at abandonment as are shown to exist at this time.

Referring to the pressure differentials that are shown to exist across the Wheeler County area (Figures 5 and 6) it may be seen that these differentials are considerable even between producing wells. *Unquestionably, the differentials in pressure existing between undeveloped portions of the field and the developed portions of the field are even greater.* It follows then that when the wells located in the producing area have declined to the point where production can no longer be continued there will remain under the undeveloped portions of the field an amount of pressure substantially in excess of that under the developed portions, which means that gas in substantial amounts will be left under the undeveloped portions of the field which would otherwise be recovered. *If wells were drilled in the undeveloped portions of the field, but are not permitted to produce, the loss of gas will be the same as though the wells were never drilled.* However, if the wells are drilled and produced ratably this gas will be recovered that would otherwise be lost.

If some wells continue to produce large quantities of gas from a few wells to the exclusion of others, their operations will continue to contribute toward large pressure differentials in the reservoir. The continuance of such operations will discourage the drilling of additional wells and to a very great extent will prevent more uniform and complete development of the field. The results, therefore, will be the loss of large quantities of gas in the reservoir that can never be produced. This is a loss just as real as if it were blown into the air and wasted.

Operation of Wells

If it is proper for some wells to operate unrestricted it is logical to assume that others can and will pursue the same policy. If this is done, I can see little possibility for additional development, and the *lack of development means the loss of gas.*

This is a condition that must prevail in the end anywhere in the East Panhandle field, where some wells are produced to the exclusion of others.

The fact that pressure differentials exist now in the reservoir is not so serious from the standpoint of total recovery, if this condition is rectified before the abandonment of the field. As I see it, the way to rectify such a condition as far as possible is to drill as uniformly as possible such additional wells as are drilled and to put into practice ratable production, which will have the tendency of equalizing the reservoir pressures during the remaining life of the field. Then only those portions of the reservoir which are never drilled, if any, will be inefficiently drained.

Ratable production alone will not bring about a greater recovery of gas. Uniform well spacing alone will not provide the means for a greater recovery. Both ratable production and uniform well spacing will result in the greatest practical recovery of gas.

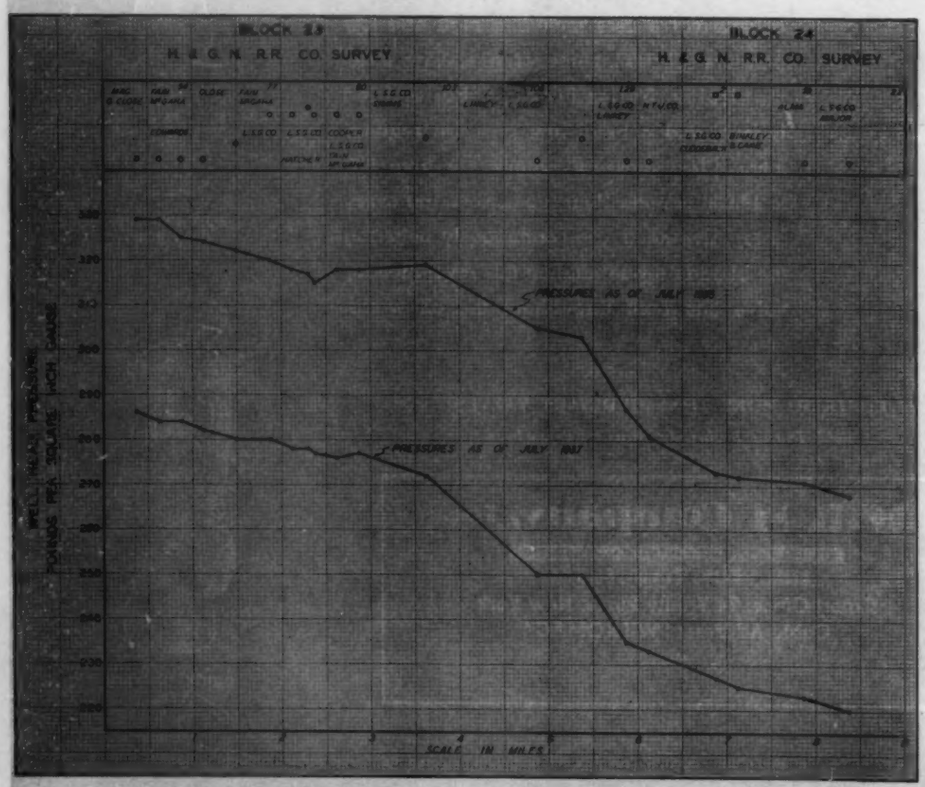


Fig. 5—Pressure profile from west to east through Wheeler County, Texas

Acknowledgment

The bulk of this article follows closely the testimony of J. H. Dunn, production engineer, Lone Star Gas Co., Dallas, Tex., given at one of the trials on the merits of house bill 266.

Litigation Arising From H. B. 266

Railroad Commission v. Clymore Production Co., and W. L. Pearson Properties, Inc., No. 55,324, 126th District Court, Travis County. A suit brought under the old 1933 gas statute, and an injunction was obtained against the Clymore Production Co. and

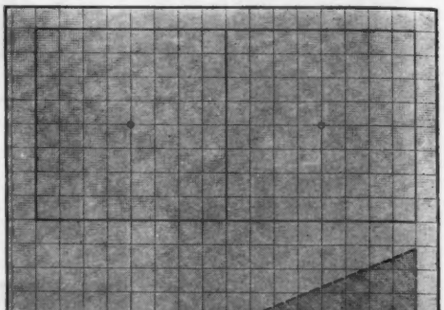


Fig. 4—Illustration showing effect on ultimate recovery of gas from a field when one or more wells are produced to the exclusion of others

Pearson Properties from which they appealed and the appeal was declared moot by the Court of Civil Appeals. Subsequently, an order was issued by the Railroad Commission of Texas directing these two companies not to blow any residue gas into the air and to cease operations as the plants had heretofore been operated.

Cargray Corp. et al v. Railroad Commission of Texas, No. 55,920, in the 98th District Court, Travis County. A suit brought by the Cargray Corp. and others against the Railroad Commission of Texas to enjoin the enforcement as against the plaintiffs of certain provisions of house bill 226, which prohibit the blowing of residue gas into the air. A temporary injunction was obtained by the plaintiffs but an appeal was made to the Court of Civil Appeals. Thereupon, the plaintiffs dismissed their suit and the injunction was dissolved.

Texas Panhandle Case

Texas Panhandle Gas Co. v. Thompson et al. A suit brought in the U. S. District Court for the Western District of Texas against the Railroad Commission to enjoin the enforcement of the proration features of house bill 266. This suit later took the style of Consolidated Gas Utilities Corp. and was heard on January 2 before the trial court, together with the Texoma Natural Gas Co. case, and a permanent injunction granted before a three-judge court. An appeal was taken to the Supreme Court of the United States (No. 89, October term, 1936) and the injunction affirmed.

Texoma Natural Gas Co. v. Thompson et al. A suit against the Railroad Commission and the Attorney General to enjoin the enforcement of the proration features of house bill 266. It was heard with the Consolidated Gas Utilities Co. case in the trial court and a permanent injunction granted the plaintiff. It was consolidated for appeal with the case of Consolidated Gas Utilities Co. and sub-

mitted with that case to the Supreme Court of the United States.

The Henderson Co. v. Thompson et al. A suit brought by the Henderson Co. against the Railroad Commission to enjoin the enforcement of provisions of house bill 266 which prohibit the use of sweet gas in the manufacture of carbon black. The case was tried before the District Court of the United States, Western District of Texas, in February, 1936, and the injunction was refused. The Henderson Co. perfected an appeal to the Supreme Court of the United States where the finding of the lower court was upheld.

Miles G. Bivens et al v. Railroad Commission. A suit brought in the District Court of the United States, Northern District of Texas, and later transferred to the Western District of Texas. Plaintiff obtained a restraining order against the enforcement of the proration features of house bill 266.

Canadian River Gas Co. v. Thompson et al. A suit brought in the District Court of the United States, Western District of Texas, against the Railroad Commission and the Attorney General to enjoin the proration features of house bill 266. A restraining order was granted the plaintiff.

Cities Service Gas Co. v. Thompson et al. A suit brought in the District Court of the United States, Western District of Texas, against the Railroad Commission to enjoin the proration features of house bill 266. A restraining order was granted the plaintiff.

The Henderson Co. v. Thompson et al. A suit brought in the District Court of the United States, Western District of Texas, against the Railroad Commission and the Attorney General, to enjoin the proration features of house bill 266. A restraining order was granted the plaintiff.

Navajo Oil Co. v. Thompson et al. A suit brought in the District Court of the United States, Northern District of Texas, against the Railroad Commission and the Attorney General to enjoin the proration features of house bill 266. A restraining order was granted the plaintiff.

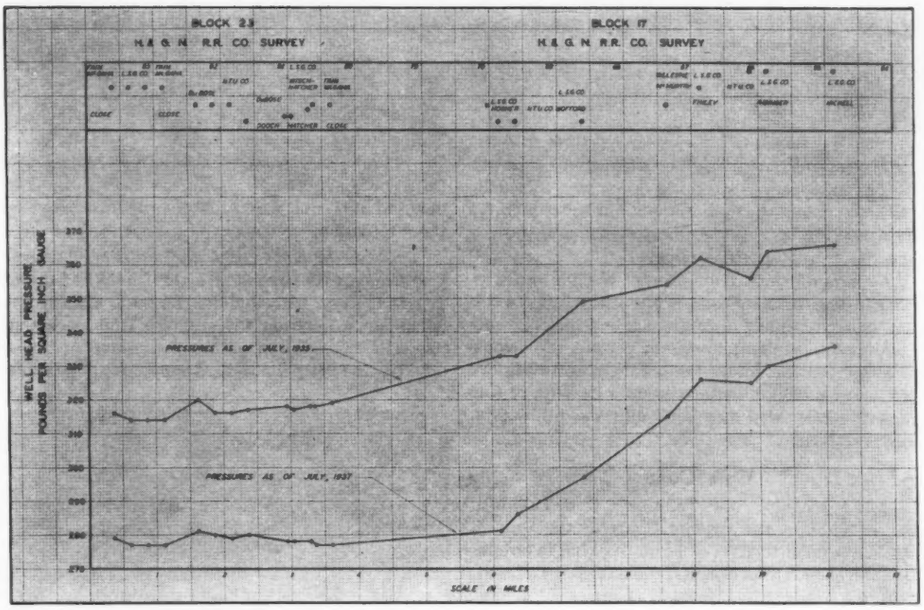

BLOCK 23
H. & G. N. R.R. CO. SURVEY
BLOCK 17
H. & G. N. R.R. CO. SURVEY
WELL HEAD PRESSURE POUNDS PER SQUARE INCH GAUGE
PRESSURES AS OF JULY, 1935
PRESSURES AS OF JULY, 1937
SCALE IN MILES

Fig. 6—Pressure profile from south to north Wheeler County, Texas

Palo Pinto Oil & Gas Corp. v. Thompson et al. A suit brought in the District Court of the United States, Northern District of Texas, against the Railroad Commission to enjoin the proration features of house bill 266. A restraining order was granted the plaintiff.

Phillips Petroleum Co. v. Thompson. A suit brought in the District Court of the United States, Northern District of Texas, against the Railroad Commission seeking an injunction against certain provisions of house bill 266 relating to waste. A restraining order was issued in the case, but upon hearing before the court this case was dismissed.

Portland Gas Co. v. Thompson et al. This suit was brought against the Railroad Commission of Texas seeking to enjoin certain provisions of house bill 266, and the temporary restraining order was issued in behalf of the plaintiff upon a hearing before a three-judge court. This case was dismissed and the injunction dissolved.

Portland Gasoline Co. v. Railroad Commission. This suit was brought against the Railroad Commission of Texas and the Attorney General seeking to enjoin the provisions of house bill 266 which prohibit the use of sweet gas for manufacture of carbon black. This case was heard before a three-judge court with the Henderson Co. case involving the same question, and both the temporary and permanent injunction prayed for and the relief asked by the plaintiff was denied by the court. No appeal was taken by the plaintiff.

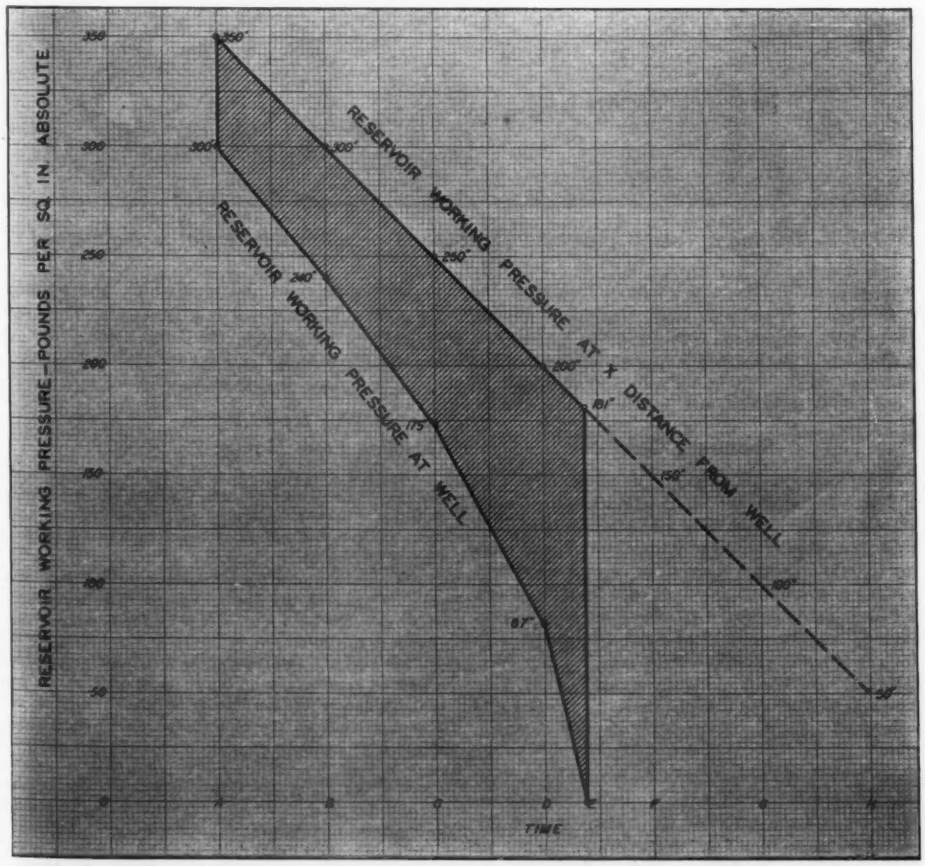

RESERVOIR WORKING PRESSURE—POUNDS PER SQ. IN. ABSOLUTE
RESERVOIR WORKING PRESSURE AT WELL
RESERVOIR WORKING PRESSURE AT X DISTANCE FROM WELL
TIME

Fig. 7—Reservoir working pressures necessary to maintain a flow of 1,000,000 feet of gas per day as pressure declines

Enjoin Waste Provisions

Shamrock Oil & Gas Co. v. Thompson et al. This suit was brought in the District Court of the United States, Northern District of Texas, against the Railroad Commission seeking to enjoin certain waste provisions of house bill 266. The case was subsequently dismissed and the temporary restraining order which had issued against the defendant was dissolved.

Clymore Production Co. v. Railroad Commission of Texas. A suit instituted in the District Court of the United States for the Western District of Texas, seeking to enjoin the state officials from enforcing as to certain wells in the Agua Dulce field the waste provisions of house bill 266. The hearing was had before a three-judge court in Austin on the application for permanent injunction after the temporary injunction had been refused, and the plaintiff was denied any relief. No appeal was taken by the plaintiff.

American Natural Gasoline Co. v. Railroad Commission of Texas. A suit brought by the plaintiff against the Railroad Commission and the Attorney General, seeking to enjoin certain waste provisions of house bill 266, the suit being instituted in a court of Travis County, Texas. A temporary injunction was obtained by the plaintiff from which

the state perfected an appeal to the Court of Civil Appeals, whereupon the case was dismissed and the injunction dissolved.

American Natural Gasoline Co. v. Thompson et al. This suit was filed in the District Court of the United States for the Northern District of Texas, against the Commission seeking to enjoin the enforcement of certain waste provisions of house bill 266. A temporary restraining order was issued in the case against the Commission, but subsequently, on a hearing of the case, the same was dismissed and the injunction was dissolved.

Cargray Corp. v. Thompson et al. This suit was filed in the District Court of the United States for the Eastern District of Texas, against the Railroad Commission, seeking to enjoin certain provisions of house bill 266, and a temporary restraining order was issued. Subsequently, on a hearing of the case, the case was dismissed and the injunction was dissolved.

Cole Case

Cole Petroleum Co. v. Thompson et al. This suit was brought in the District Court of the United States, Western District of Texas, seeking to enjoin the Railroad Commission and the Attorney General from enforcing the proration features of house bill 266, and a restraining order was issued by the court.

J. M. Huber Corp. v. Thompson et al. A suit was filed in the District Court of the United States, Northern District of Texas, against the Commission and the Attorney General, seeking to enjoin the enforcement of provisions of house bill 266 which prohibit the use of sweet gas for the manufacture of carbon black, and a temporary restraining order was issued in behalf of the plaintiff. This suit was dismissed on hearing and the injunction was dissolved.

Sunray Oil Co. v. Thompson et al. This suit was brought against the Railroad Commission of Texas in the District Court of the United States, Northern District of Texas seeking to enjoin the enforcement of certain provisions of house bill 266, and a temporary restraining order was issued against the Commission. On a hearing of the case the same was dismissed by the court and the injunction was dissolved.

Smith Brothers v. Thompson et al. This suit was brought against the Railroad Commission of Texas in the District Court of the United States, Northern District of Texas, seeking to enjoin the enforcement of certain provisions of house bill 266, and a temporary restraining order was issued against the Commission. On a hearing of the case the same was dismissed by the court, and the injunction was dissolved.

State v. Palo Pinto Oil & Gas Co., State v. Texas Panhandle Gas Co., State v. Texoma Gas Co. These suits were brought by the state, seeking an adjudication in the state court of the constitutionality of the proration features of house bill 266, and is in accordance with the federal statute. The state was restrained from enforcing the provisions of the act pending final hearing. The cases were subsequently dismissed.

Skelly Oil Co. v. Thompson et al. This suit was filed against the Railroad Commission and the Attorney General in the District Court of the United States, Northern District, to restrain certain waste provisions of house bill 266, and a temporary restraining order was issued. Upon a hearing of the case the same was dismissed and the injunction was dissolved.

State v. Henderson Co. This suit was filed in the 98th District Court of Travis County, Texas, by the state against the Henderson Co., seeking to enjoin this company from violating certain waste provisions of house bill 266, and to collect penalties. A temporary injunction was issued in behalf of the state and the case is pending.

Danciger Oil & Refining Co. v. Thompson et al. This suit was brought against the Railroad Commission of Texas in the District Court of the United States for the Western District of Texas, seeking to enjoin certain waste provisions of house bill 266, in which it was asserted that the wells in question were not gas wells but oil wells (similar to the contention made by the Clymore Production Co). The court refused a temporary restraining order and this suit was subsequently dismissed on the stipulation.

State v. Danciger Oil & Refining Co. This suit was brought by the state in the District Court of Travis County, 98th Judicial District, against the defendant to restrain and enjoin it from operating its wells in violation of the provisions of house bill 266, and for penalties. A temporary injunction was granted by the court which prohibited the defendant from violating such statute. Subsequently, upon agreement reached between the plaintiff and defendant, this suit was dismissed upon the dismissal of the suit brought by the defendant in the Federal District Court, just above referred to.

Shamrock Case

Shamrock Oil & Gas Co. v. Thompson et al. This suit was brought in the District Court of the United States, Northern District of Texas, against the Railroad Commission and the Attorney General, seeking to enjoin the enforcement of certain waste provisions of house bill 266. This case involved a casing-head plant operated by the company in Gray County, Texas, and should not be confused with the case filed in the same court relating to properties in Moore County, which was case No. 497. This case was No. 503 and was dismissed by the plaintiff voluntarily on the twenty-first day of January, 1936.

Palo Pinto Oil & Gas Co. v. Thompson et al. This suit was brought against the Railroad Commission of Texas and the Attorney General seeking to enjoin the enforcement of the proration order of July 20 in the United States District Court, Northern District of Texas, and was No. 848 in that court. Subsequently, the commission suspended its order of July 20 in so far as it affected the Strawn field, and this suit was dismissed by the plaintiff without prejudice. This suit is not to be confused with the subsequent suit brought by the Palo Pinto Oil & Gas Co., which is No. 852 and which is still pending in the Northern District of Texas.

All of the above suits were a result of the Commission's order of December 10, 1935.

Consolidated Gas Utilities Co. v. Thompson et al. As a result of the Commission's order of November 18, 1937, attempting to regulate the production of gas in the East Panhandle field, the above styled suit was brought in the District Court of the United States, Western District of Texas, seeking to enjoin the Railroad Commission. The Commission in turn brought suit in District Court (98th) of the State of Texas seeking through injunction (stay order) to enforce its rules and regulations, and to allow the state court to construe a Texas law. The hearing in federal court upon the Commission's "motion to remand" is tentatively set for March 29, 1938.

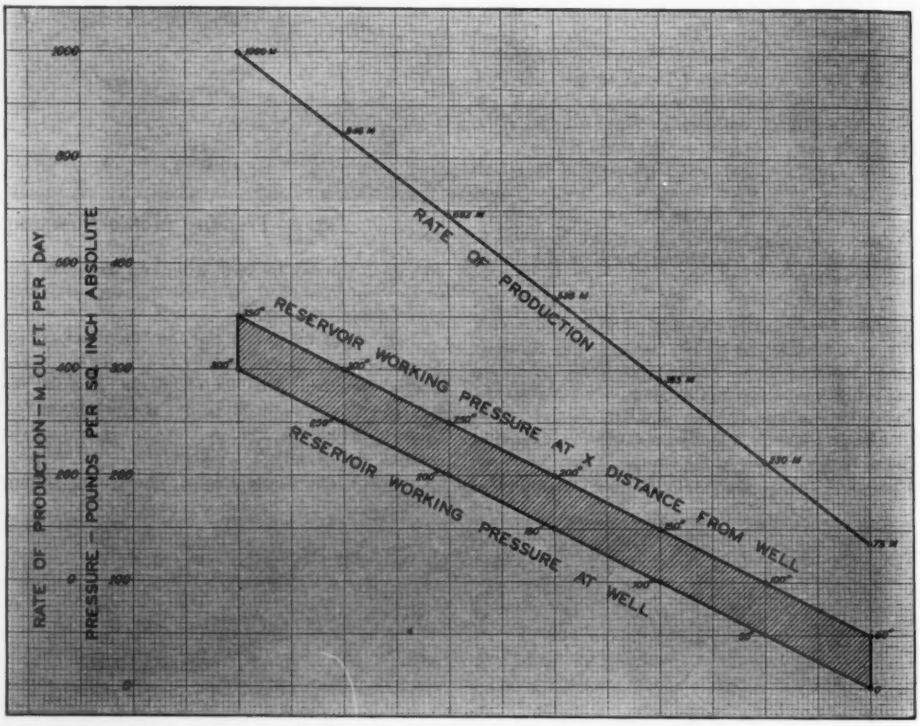

RATE OF PRODUCTION—M. CU. FT. PER DAY
PRESSURE—POUNDS PER SQ. INCH ABSOLUTE
RATE OF PRODUCTION
RESERVOIR WORKING PRESSURE AT X DISTANCE FROM WELL
RESERVOIR WORKING PRESSURE AT WELL

Fig. 8—Decline in rate of production if constant pressure differential is maintained

Soviets Will Try to Refine Gasoline From Lignite

The first experimental unit for the production of gasoline from lignite in the U.S.S.R. has been completed in Kharkov, according to information reaching the American-Russian Chamber of Commerce in New York.

The unit has now been subjected to trial runs and the first gasoline has been produced. The technological process has been worked out by the Kharkov Coal-Chemical Institute.

The unit put into operation in Kharkov is represented as a prototype of future large-scale plants for the distillation of gasoline from coal, Prof. N. M. Karavayev, one of the outstanding Soviet authorities on the hydrogenation of coal, has stated. According to the professor, these plants will be built first in regions where solid fuels are abundant such as eastern Siberia and the Far East and will contribute to the economic development of the isolated territories.

"The Kharkov Coal-Chemical Institute has adapted the Bergius process for Ukrainian lignites," said Professor Karavayev. This process has been tested commercially in Great Britain and Germany.

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph. D., Technical Editor

Aniline Point Determination For Analysis of Hydrocarbon Liquids

What is the method now used for the determination of the critical solution temperature of aniline as applied to hydrocarbon analysis?—H. H.

Aniline point apparatus: A test tube, 25 x 150 mm., with glass or wire stirrer and thermometer, set in a wider tube which acts as an air jacket. This unit is heated in water.

Method: A 5 cc. portion of gasoline is placed in the test tube, 3 cc. freshly distilled aniline from a 10 cc. burette added, then the mixing temperature noted. Add 0.5 cc. portions of aniline, noting temperature after each addition until the highest mixing temperature is found; this is the critical solution temperature.

Removal of aromatic hydrocarbons is made by shaking 20 cc. of gasoline with 70 cc. of 98-100 per cent sulfuric acid for 15 minutes in a separatory funnel. Draw off the sludge and repeat with 20 cc. of the 98-100 per cent acid. After removal of spent acid, the gasoline is washed with water through sodium hydroxide solution and finally dried over calcium chloride. The per cent of aromatic hydrocarbons is obtained by multiplying the increase of the critical temperature of solubility by 1.19. This weight percentage may be calculated for volume per cent by means of the equation:

$$Y = 100 - (100 - X) \cdot \frac{S_1}{S_2}$$

where X = content of aromatic hydrocarbons in per cent by weight
Y = content of aromatic hydrocarbons in per cent by volume
S_1 = specific gravity of the original gasoline
S_2 = specific gravity of gasoline after the removal of aromatic hydrocarbons.

This method can not be used for gasolines of high olefin content.

The factor 1.19 is the average arithmetical factor for benezene, toluene and xylene and represents only the first approximation. The variation is still within the limit of the experimental error. If the aromatic hydrocarbon content is above 20 per cent, the gasoline must be diluted first with an equal amount of the same gasoline, previously freed from aromatic hydrocarbons, due to the fact that the factor 1.19 is only accurate for concentrations not exceeding 20 per cent.

Reference: Standard Methods for Testing Petroleum Products, Institution of Petroleum Technologists. Chemistry and Technology of Cracking, by Sachanen and Tilicheyev.

Wisconsin Law Relating to Inspection of Petroleum Products

Could you furnish the essential details of the Wisconsin law covering petroleum products? We are interested in this law as it applies to gasoline and kerosene.—C. E. C.

The state of Wisconsin has an inspection law covering the quality of gasoline, motor fuel, kerosene, and lubricating oil. The required specifications are summarized as follows:

Gasoline.—Distillation: Distilled over 10 per cent at 176° F., max.; 20 per cent at 225° F., max.; 50 per cent at 284° F., max.; 90 per cent at 392° F., max. Endpoint not above 437° F. Minimum recovery, 95 per cent.

Motor fuel.—Open-cup flash, under 120° F. Initial boiling point, under 300° F. Recovery, under 347° F., 10 per cent; under 392° F., 25 per cent; under 464° F., 95 per cent.

Kerosene.—Open-cup flash, min. 105° F. Fire, min. 125° F. Illuminating oil for passenger cars, boats, etc., shall not ignite and burn under 300° F.

Lubricating oil.—The law covering lubricating oil is to prevent misbranding.

Removing Hydrogen Sulfide From Sour Gas With Alkaline Wash

Could you furnish us with information regarding an efficient and economical treatment of sour gas to be used as fuel in multiple cylinder engines? Our production of oil and gas is rather high in hydrogen sulfide. It has been suggested that the use of a solution of caustic soda in the ratio of one pound to one gallon of water per horsepower will give effective results.—J. K. B.

Hydrogen sulfide is soluble in cold water in the ratio of approximately 400 parts of gas to 100 parts of water. In other words, more than four volumes of the hydrogen sulfide gas will be absorbed in one volume of cold water. Systems involving washing the gas in cold water can be applied, except in districts where cold water is not easily obtined in sufficient volume.

Solutions of caustic soda and sodium carbonate combine with hydrogen sulfide to form the sodium sulfide. The caustic soda or sodium carbonate may be recovered for further use by processes that are now available.

No fast rule, such as one pound of caustic soda to one gallon of water can be followed because the action is chemical, so the quantity of caustic soda or sodium carbonate required depends directly on the quantity of hydrogen sulfide desired to be removed.

CHEMICALS FOR THE PETROLEUM INDUSTRY

Monochlorbenzene
(Phenyl chloride)

Use—Solution with other solvents.
Form—Colorless, volatile liquid.
Formula—C_6H_5Cl.
Specific gravity—1.106.
Freezing point— —49.4° F.
Specific heat—0.31 B.t.u./lb. at 70° F.
Heat of vaporization—139.8 B.t.u./lb. 269° F.

LIMITATIONS

Boiling point	269° F.
Boiling range	Within 1° C.
Flashpoint	84.4° F.

Octanes Separated from Oklahoma Petroleum

Is there any octane present in the crude oil produced in Oklahoma?—E. S. T.

The National Bureau of Standards issued a research paper last year describing the separation of three octanes from Oklahoma petroleum. This work was done by J. D. White and A. R. Glasgow, Jr.

The complex methyl octane fraction from an Oklahoma petroleum was separated into its constituents. The work consisted in the isolation of the 2-, 3-, and 4-methyloctane by alternating distillation with extraction and crystallization. The three, in the order named, were present in the proportions of 3, 1 and 1; the total methyloctane content of the oil being about 0.3 per cent.

Reference: J. D. White and A. R. Glasgow, Jr., Separation of the three Methyloctanes from Mid-Continent Petroleum, National Bureau of Standards, R.P. 1033, Oct., 1937.

Salt Present in Crude Oil and Its Removal Before Refining

I am interested in finding out if there is any salt in crude oil as it enters a refinery and if there is, what method is used for its extraction? Is there a patent on the method?—V. H. H.

Salt sometimes reaches the refinery in the crude oil. In most instances the salt is contained in the small quantity of water which may accompany the oil and in others it is suspended in the oil as a part of an emulsion. The purchasers, pipelines, enforce a limitation of from 0.5 to 1.0 per cent total sediment and water in the crude oil, others stipulate that the oil shall not contain over 0.3 per cent free water.

Oil well waters contain 25 to 30 per cent salt, which, at the low specification of 0.5 per cent, would permit the presence of over 300 pounds per 1,000 barrels, a quantity sufficient to present a serious problem to the refiner. The refineries have established a maximum permissible salt content for crude oil deliveries of 5 pounds per 1,000 barrels; a few allow 30 pounds.

Salt, as reported in chemical analysis, is obtained by calculation from chlorides, hence includes other compounds, such as magnesium and calcium chlorides, in addition to sodium chloride. The standard method for stating water analyses is parts per million, easily converted to per cent by proper movement of the decimal point. One part/1,000,000 is equivalent to 0.0584 grains per gallon. One pound is 7,000 grains, and grains per gallon may be converted to parts per million by dividing by 0.058.

Salt is readily soluble in water, about the same in cold water as in boiling water and since there is not known economical method for its removal by precipitation, washing the oil with water is the common method for salt removal. Some refiners have used a settling system, in which the oil is warmed before passing to the crude oil still. Processes of this sort are not covered by patents.

PROBLEMS FROM READERS

Edited by L. G. E. Bignell

Recovering Gold From Sea Bottom

This is a hypothetical question but asked because I desire to have your opinion as to the practicability of using rotary equipment for other than drilling purposes. What I wish to ask is:—A gold bearing sand is under 600 feet of ocean water and too deep to dredge. Would it be practical to rig up a boat or scow with a rotary mud pump and rotary hose such as is used between the pump and kelly in drilling, or using well casing with swing joints, reaching to the sand and pump this sand to the boat at the surface. The idea of a flexible hose or casing with swing joints is advanced to take care of the motion of the boat. As operation of a pump placed near the bottom would be impracticable, would a suction pump placed as near the water level as possible do the job, or would friction and possibly other losses retard the flow to such an extent that the sand would not be carried to the point desired in worth while quantities? —H. A. S.

Rather a strange question you asked in your letter for an oil paper to answer, but it so happens the writer spent about 20 years in the mining business before entering the oil industry. But that does not indicate that I have the answer because I still maintain it is rather an unusual question. In the first place how do you know there is a gold bearing sand at the bottom of the ocean?

You have a rather novel idea, which in effect would be to drill hydraulic holes into the sand using rotary equipment. There is a rotary outfit now being tested using rubber hose instead of drill pipe and it is claimed this hose can be used in drilling holes to 15,000 feet depth. That should answer the question about reaching the bottom of a 600-foot body of water with the stream pumped by the slush pumps. So the answer to the first part of your first question is "Yes." It is feasible to reach depths of 600 feet and even greater with a flexible hose.

But if this is considered as a rotary outfit it is going to be necessary to pump the return "sand" upward through some annular space outside of the hose. It would be impossible to use a larger hose over the small hose because the pressure in excess of 300 pounds per square inch at the bottom of the 600-foot body of water would collapse the hose and close the annular space. It would be possible to keep the hose conducting the fluid to the ocean floor open by pump pressure applied from the surface but it would not be possible to counteract the crushing effect of the body of water on the outer hose, or what is equivalent to the casing in the rotary drilling operation.

There is a possibility of developing a pump which could be operated at the ocean bed and pump sand to the surface. There is an electrical submerged pump now in use which will handle as much as 20 per cent sand by volume in an oil well. Wear on the impellers is not as excessive as might be expected. This type pump with special impellers might be lowered on a suction hose and develop enough force to keep the hose from collapsing due to external pressure.

A suction pump will not lift water more than 25 feet economically so that type apparatus is not practicable.

There is a device known as the Evan's elevator used in gold mining which works on the principle of a steam injector using a head of water about five times the height of the lift to generate sufficient force to wash sand from a stream and deliver it to a maximum height of about 70 feet. This would not be practicable for your problem because it would mean a head above the ocean surface of about five times 600 feet or 3,000 feet. This unit was only about 33⅓ per cent efficient due to friction loss. In addition to friction loss the actual work necessary to lift sand and free gold to the surface would be considerable. If the upward stream does not move at high velocity the gold will settle out in the conductor pipe and only the sand reach the top.

It is assumed your question is purely hypothetical so the answers are to be classed the same. The main point to prove first is that there is sufficient gold under the ocean bed to warrant recovery and while the above answers may not be right it is predicted man can devise means of recovering that gold if the profit would justify it.

Tubing Stretch Formula

I am interested in securing an accurate formula to be used in calculating the position of the bottom of a string of tubing. Can you furnish same?—A. C. T.

To determine the length of a string of tubing as it is hung in a hole it is necessary to take into consideration two things, the joint make-up and the amount of stretch after the tubing has been run. The following practical solution and example should give you the desired information.

Practical solution method: Measure the over-all length of each joint of tubing including the coupling. Count the number of joints made up. The make-up loss per joint is the total tubing thread length plus the distance the last thread scratch is buried from the coupling face. (The make-up loss is 1.800 inches or 0.15 feet for 4-inch oil well tubing and 2.6875 inches or 0.224 feet for 4-inch oil well tubing.)

The amount of theoretical stretch for any length of string freely suspended in air may be calculated using the following formula:

$$\text{"e"} = \frac{12\,W\,L^2}{2\,A\,E} = .000{,}000{,}703\,L^2$$

where "e" = Stretch in inches
W = Weight of pipe in pounds per foot
L = Length of string in feet
A = Area of pipe wall in square inches
E = 29,000,000 (Young's modulus for steel).

Tubing strings are not usually stretched beyond their yield point at any place so the average calculated elongation should be satisfactory.

Example: Assume a 4-inch oil well tubing string with 2,200-foot total over-all length of the 110 joints. Then:

110 — 1 = 109 joints to be made up
109 × 0.15 = 16.35 feet make-up loss
2,200 — 16.35 = 2,183.65 feet.

Stretch equals:

.000,000,703 × $2{,}183.65^2$ = 3.3 inches
and 2,183.65 + (3.3 ÷ 12) = 2,183.925 feet or 2,183 feet 11 inches (ans.)

If the string was submerged in salt water the stretch would be 2.86 inches.

Marginal Well Allowables in Texas

I am interested in 95 acres of land in Archer County, Texas, on which there are 11 producing wells. The field was developed in 1934 and 1935 and the wells are about 1,300 feet deep and came in for from 20 to 2,400 bbls. initial. The total initial production was about 4,200 bbls. for the 11 wells. These wells now pump about 300 bbls. per month. Is this all that they can pump or is the production limited by the allowable? What amount of oil should these wells be producing pumping at full capacity? What recourse have I if oil is being pumped off on adjoining leases?—H. L. C.

The allowable report of the Railroad Commission of Texas for January indicates that of the wells in Archer County 89.3 per cent are classed as marginal wells. Under Texas law wells less than 2,000 feet deep that cannot produce more than 10 bbls. per day average over a 30-day period are classified as "marginal" wells. This indicates that the wells in question cannot make more than 10 bbls. per day each if produced to full capacity. Therefore the answer to your second question is "The wells cannot produce more than 10 bbls. per day each if pumped to full capacity."

The oil industry would be interested to know just what decision would be rendered by a court if damage suit was filed to try to collect damages for assumed drainage by an offset property. In the first place, how would the plaintiff go about proving the oil produced by his neighbor did come from under his land? It is impossible to "ear-mark" the oil and the science of determining the quantity of oil in place under any particular parcel of land has not reached the phase where estimates will be accepted by a court as evidence. In a word you have no proof the land in which you are interested is being drained by other than the wells on the property so you would have no case in court. In all probability your property is not being drained by offset wells because under low-pressure conditions now existing in the Archer County fields there is not enough reservoir energy to drive the oil very far away from the nearest well.

Geology of Cuba

Can you tell me where I can obtain information on geology of Cuba? I am very much interested in this subject and will be grateful to you for any information you can give me about the best publications or text books on this topic.—J. H. C.

The American Association of Petroleum Geologists, with headquarters in the Wright Building, Tulsa, publishes the following bibliography of articles printed in its bulletins. It may be possible to secure copies of some of the bulletins by contacting the A.A.P.G. headquarters.

Geology of Cuba, Vol. XVI, p. 533.
Geology of the Cuban oil fields. Vol. II, p. 133.
Jurassic as a source of oil in western Cuba. Vol. VIII, p. 516.
Oil in igneous rocks of Cuba, Vol. XVI, p. 809.
Probable age of aptychus-bearing formations of Cuba. Vol. XVI, p. 943.
Results of drilling in Cuba. Vol. II, p. 157.
Unconformity in Cuba. Vol. VIII, p. 518.

The volume referred to in each instance is the A.A.P.G. Bulletin, published monthly.

FIELD OPERATIONS

Summarizing the Week's Developments

TEXAS—Thousands of acres of leases were thrown open for deep exploration by the completion of a well in Archer County about 7 miles southeast of the K.M.A. field which lies mostly in Wichita County. The discovery well started at about 3,000 bbls. per day at a total depth of 3,860 feet. It either opens a new pool, or is a long-distance extension of K.M.A. It is in an old shallow-pay area. Several hundred acres were added to K.M.A.'s west side by a 1,000-bbl. well at a plugged-back depth of 3,974 feet. The third large Ordovician sand producer in the Sand Hills pool in Crane County started at the rate of 3,665 bbls. a day, reviving interest in the deep-seated horizon. Ordovician tests in Tom Green and Pecos counties are running favorably and will soon be ready for tests. The Slaughter field in Hockley County was extended a mile by a well that gauged 372 bbls. in 12 hours after its second acid treatment. In Southwest Texas new sands and extensions were features while in the Gulf Coast the first crude oil production in the Eureka gas field, at the very gateway of the city of Houston, is interesting.

CALIFORNIA—The largest initial producer in the Wilmington field was brought in in the Long Beach harbor area, and flowed at the rate of 1,000 bbls. per hour. Another well flowing 4,510 bbls. in 24 hours was completed on the same lease. A third well in the same area started at 8,000 bbls.

OKLAHOMA—A wildcat south of Calvin in Hughes County flowed 440 bbls. of oil in two hours, after acidizing Viola lime. Two large gas wells were completed in the Cement field, Caddo County, one for 161,700,000 feet and one for 35,000,000 feet daily, in addition to several oil wells. A new gas area was opened in section 22-13-19, Muskogee County. Work was started at a wildcat in section 34-20-1w, east of the Lucien field, Noble County.

KANSAS—The Sittner pool, Stafford County, was extended one-half mile northwest in section 29-21-12w, and the Silica West pool, Barton County, was given a three-fourths mile west extension in section 3-20-11w. A 2,622-bbl. well was completed in section 14-24-11w, to rate as the biggest producer in the Zenith pool, Stafford County. Work was started at a wildcat in section 11-13-1e, Dickinson County.

TEX-LA-ARK—Two near completions, one in Sabine Parish, Louisiana, the other in Columbia County, Arkansas, which last week looked like important discoveries, have yet to prove themselves, although both will make producers.

WYOMING—A well flowing 70 bbls. per hour in the Big Medicine Bow field and another flowing 63 bbls. per hour in the Lance Creek field and extending production a quarter mile, were the outstanding features in the state.

ILLINOIS—Wells in the new Centralia field in Clinton County, which started at from 225 to 492 bbls. a day on the pump indicate that the Benoist sand in that field may be more prolific than in the Patoka field in Marion County.

NEW MEXICO—A wildcat 2 miles southeast of Jal sand production in section 1-26-37, Lea County, was showing for a pool opener. Another wildcat in section 29-25-38, extreme southeastern Lea County, was dry and abandoned. Thirteen oil producers were completed in Lea County, the largest number in recent weeks.

Completions in All Fields

(Week Ending March 19, 1938)

	Oil	Gas	Dry	Total	1938 total comp. to date	1937 total comp. to date
N. Y., Pa. and W. Va.	60	12	5	77	1,104	962
Ohio	1	4	3	8	205	203
Indiana	1	1	0	2	24	27
Kentucky	7	12	1	20	166	28
Illinois	11	2	0	13	128	8
Michigan	6	0	3	9	159	169
Kansas	25	1	9	35	421	430
Oklahoma	31	3	9	43	383	541
Texas:						
North Central Texas	37	2	30	69	562	576
West Texas	34	1	7	42	512	517
Texas Panhandle	12	1	0	13	167	133
East Texas	42	0	0	42	550	441
East Central Texas	3	1	0	4	86	139
East Texas Border	9	0	0	9	36	91
Gulf Coast Texas	15	1	5	21	263	262
Southwest Texas	32	2	7	41	444	707
Total Texas	184	8	49	241	2,620	2,866
North Louisiana	9	0	4	13	130	86
Gulf Coast Louisiana	5	0	4	9	113	107
Total Louisiana	14	0	8	22	243	193
Arkansas	4	0	0	4	45	21
Montana	1	2	1	4	12	15
Wyoming	4	0	1	5	41	22
Colorado	0	0	0	0	1	6
New Mexico	13	0	3	16	129	162
Utah	0	0	0	0	0	0
California	20	0	3	23	295	273
Total United States	382	45	95	522	5,976	5,926
Total previous week	313	37	103	453		
Difference	69	8	8	69		

Outstanding Fields--Highlights

(Week Ending March 19, 1938)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
Hastings	2	14	1	626	485	20,630
McCampbell	2	4	1	259	110	5,112
Saxet	1	7	0	0	588	36,869
Benavides	5	9	3	517	158	9,560
East Texas	56	79	42	2,174	24,772	428,450
Talco	5	5	2	473	621	26,497
K.M.A.	43	116	21	18,433	194	7,100
Ector County	21	89	9	11,351	919	29,200
Winkler County	7	24	4	2,605	1,597	36,798
OKLAHOMA						
Fitts-Jesse	2	10	1	486	964	64,450
Oklahoma City	2	19	0	0	1,056	125,100
KANSAS						
Barton County	5	22	3	1,077	299	9,730
Ellis County	5	21	4	2,706	296	8,500
Rice County	7	25	3	1,051	1,126	32,330
Russell County	7	46	6	4,670	1,030	29,160
NEW MEXICO						
Lea County	15	104	13	1,962	1,656	96,700
LA-ARK-TEX						
Rodessa, Ark.	2	8	3	565	71	8,233
Rodessa, La.	0	7	0	0	448	41,900
Rodessa, Tex.	1	19	9	3,950	408	36,745
Lisbon, La.	2	10	4	3,775	189	10,670
Shuler, Ark.	1	16	1	735	32	15,490
MICHIGAN						
Buckeye	3	21	3	1,025	377	26,271
ILLINOIS						
Central Illinois	26	121	11	3,489	319	26,800
CALIFORNIA						
Wilmington	9	35	8	28,488	382	116,300

Texas and Louisiana Gulf

Prospective Oil Pool Near the City Limits of Houston

By
NEIL WILLIAMS

HOUSTON, Tex., Mar. 21.—Prospects of opening the first crude production in the Eureka gas field near the Houston city limits in Harris County, and the showing of a wildcat in East Baton Rouge Parish, Coastal Louisiana, held the attention of operators along the Gulf Coast district the past week.

Jack Frazier No. 1 Nieman-Vollmer, southeast of distillate production of the Eureka field, cored 32 feet of oil sand, and casing is being cemented for a production test. From 7,685-7,700 feet, a 15-foot section was recovered, the top 5 feet being shale and the bottom 10 feet oil sand. From 7,700-15 feet the recovery was oil sand, and from 7,715-30 feet, the total depth, 15 feet was recovered of which the top 7 feet was sand and the bottom 8 feet was shale.

Eureka was proven for distillate production in 1934 with the completion of C. B. Bunte and others No. 1 Laura Lackner from a total depth of 7,686 feet. The present test is in the J. Reinerman Survey, about 1,000 feet southeast of Houston Oil Co. and others No. 1 Heiberg and Lackner, which was completed in 1936 at a total depth of 7,676 feet. In view of the fact that No. 1 Neiman-Vollmer is somewhat lower on the structure than the two distillate wells, it has an excellent chance of making a good producer. The showing has attracted much attention and leasing and royalty buying has extended into the Houston city limits.

Fairbanks Extended

Another important extension loomed for the newly opened Fairbanks field, Harris County, as Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 1 White logged favorable showings. The first showing was logged at 6,790 feet with additional cores showing gas at 6,693-6,705 feet, 6,782-83 feet and at 6,786-90 feet. Based on top of the Cockfield at 6,540 feet it is practically normal with the discovery well. No. 1 White is approximately a half mile southeast of E. L. Smith and Ownby Drilling Co. No. 1 Mills, completed last week at 6,833-41 feet, for an initial production of 57.75 bbls. in 16 hours through a one-eighth inch choke. Recent developments indicate a field of major importance, although additional development will have to be done before the trend can be determined. To the southeast about 1½ miles, H. E. Williams was testing No. 1 Vega. The casing was perforated at 6,822-34½ feet, and the well was flowing into the burning-pits with no estimate on the amount of fluid it was making. Midway between this test and the discovery well, location has been made by H. C. Adams for No. 1 J. P. Dawson in the W. K. Hamblen Survey.

In the southern part of the county and in the Genoa area, West Production Co. has made location for an interesting wildcat. It is located on the G. M. Sowden lease in the J. Lindsey Survey.

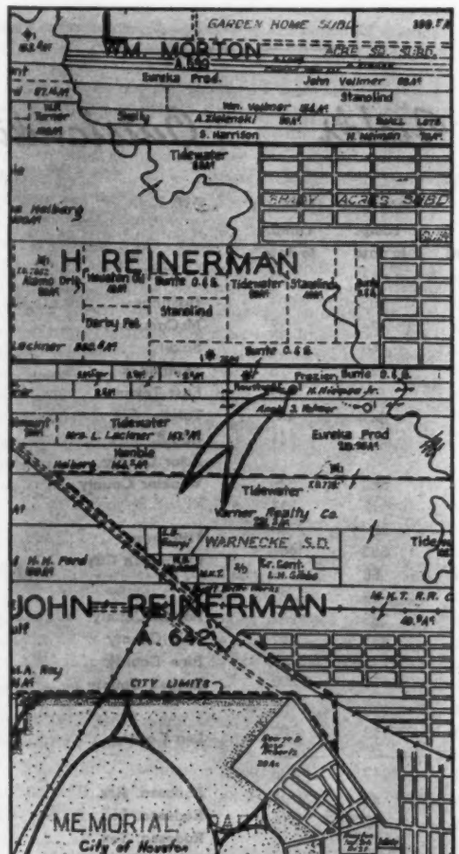
Near the town of Edna in Jackson County, H. J. Porter perforated casing in No. 1 Foust at 2,655-60 feet, and on a 30-minute drill stem test it showed 250 feet of fluid, the first 50 feet being oil-cut mud and the next 200 feet was oil and drilling mud of which 60 per cent was 24-gravity oil. Due to the lack of pressure the casing will probably be perforated higher. This test is located in the Peter White Survey and attracted much attention several weeks ago when the same horizon showed evidence of oil and gas. The hole however was drilled to a total depth of 5,177 feet, before the operators plugged back.

The Withers field, Wharton County, was extended slightly to the southwest with the completion of Cockburn and others No. 1 G. W. Britton. Sand was topped at 5,528 feet and with the hole bottomed at 5,549 feet, it was completed for an initial production of 15 bbls. per hour through a three-sixteenths inch choke. Location is in the G. W. Britton Survey.

In the Winnie area, Chambers County, Laverne Decker and others No. 1 Broussard, a wildcat in section 30, H.&T.C. Survey, had reached a critical depth and was being watched with interest. The hole is below 6,700 feet and operators were scheduled to start coring for the Marginulina and Frio formations.

The southwest extension area of the Hardin structure, Liberty County, was extended to the southwest and west with the completion of Arkansas Fuel Oil Co. No. 1 Green, and the showing of Sun Oil Co. No. 1 Hinsey. The green test flowed 586 bbls. per day through a quarter-inch choke from sand at 7,593-7,615 feet, the total depth. To the north, and about 2,000 feet west of production, No. 1 Hinsey is bottomed at 7,674 feet and casing was cemented at 7,644 feet. Additional producers were completed by Gulf Oil Corp. on the Barfield lease and L. W. Wickes on the Tullos lease.

In the Bay City field, Matagorda County, Smith & McDannald No. 1 Gaines flowed 13 bbls. per hour through a 13/64-inch choke with tubing pressure 475 pounds. The hole is bottomed at 8,165 feet. In the Midfield area, J. K. Dorrance has derrick up for an interesting wildcat. It is located on the M. Adamcik lease in the I.&G.N. Survey No. 1. Superior Oil Co. No. 1 Kruger, 4,500 feet southwest of the McCrosky discovery well is preparing to sidetrack and re-core the 6,600-foot zone where two weeks ago a showing of oil was logged. The hole was drilled to a total depth of 7,383 feet, and is much lower than the discovery well which was completed in the Frio formation at 6,626 feet.



W. W. Zingery, Maps, Houston

Eureka gas field adjoining the Houston city limits, showing location of Jack Frazier No. 1 Neiman-Vollmer which is expected to give the field its first oil production

Further development of the Clinton field, Harris County, was encouraged with the completion of Stanolind Oil & Gas Co. No. 1 Nora Barraco, which was completed for an initial production of 408 bbls. per day through a quarter-inch choke with tubing pressure 380 pounds and casing pressure 430 pounds. This is by far the best well completed on the structure which was originally discovered as a distillate field. Two additional wells completed in this sand resulted in a gas well and one small pumper.

Coastal Louisiana

Interest in Coastal Louisiana was centered on Austin B. Taylor No. 1 Duplanter, a wildcat on the University Prospect, section 65-7s-1w, East Baton Rouge Parish. The hole is bottomed in sand showing oil at 6,477 feet, and casing is being cemented without making a drill stem test. A Schlumberger survey showed 8 to 10 ohms resistivity and 125 millivolts porosity from from 6,470-77 feet and 5 ohms and 125 millivolts porosity at 6,451-60 feet. This is the third test on this prospect. The deepest hole was drilled by Superior Oil Co. on the Duplanter lease. It reached a total depth of 10,360 feet. Several encouraging showings were logged at intervals from 6,200 to 8,600 feet.

Another salt dome located along the Conroe trend was found by Amerada Petroleum Corp. No. 4 Well, in the Cheneyville field, Rapides Parish. The top of the salt is not definitely known but is thought to be at a break in the formation logged at 6,980 feet. The hole is bottomed in salt at 7,045 feet, and the test is shutdown for orders. The main pay in the field is developed from the Cockfield at 5,500 feet, and No. 4 Well was a projected deep test and had logged some encouraging showings below the regular pay. The last showing was logged in lime formation from 6,703-28 feet, and a drill stem test was attempted, but it failed. This is the farthest inland salt dome to have been found in the district. Its discovery is expected to lead to further development of the structure.

Gulf of Mexico Well Shut In

Superior Oil Co. and Pure Oil Co. No. 1 State, which opened the first oil field in the Gulf of Mexico, offshore from Cameron Parish, has been shut in while storage tanks are being erected. Production was obtained by perforating the casing in the Miocene section at 5,110-30 feet. It flowed an estimated 250 bbls. per day through a 7/64-inch choke. The discovery is believed to be on a large structure which extends to the shore line where derrick is being built for the same company's No. 1 John Sells in section 5-15s-8w.

In Vermilion Parish and about 5 miles west of the Gueydan field, location for a projected deep wildcat was made by Magnolia Petroleum Co. on the Ferguson lease in section 5-12s-2w.

One mile southeast of production of the Roanoke field, Jefferson Davis Parish, Humble Oil & Refining Co. made location for No. 1 L. A. Williams. It is in section 13-9s-4w, southeast of a recent dry hole drilled by Superior Oil Co. on the O. E. Ferguson tract.

Shell Petroleum Corp. added another deep producer to the Gibson field, Terrebonne Parish with the completion of No. 4-B Realty, section 17-17s-15e. It flowed 970 bbls. per day through a quarter-inch choke from a total depth of 9,502 feet.

In the Lafitte field, Jefferson Parish, Texas Co. No.

(Continued on Page 74)

Kansas Developments

By
DAL DALRYMPLE

Extend Sittner, Silica Areas; Complete Big Well at Zenith

Extensions of the Sittner and Silica pools and completion of the biggest producer in the Zenith area were features of the past week in Kansas field activity. Several new wildcats were started.

Torrey & Feaster No. 1 Mueller, SE cor. section 29-21-12w, extended the Sittner pool, Stafford County, one-half mile northwest. It topped Arbuckle lime at 3,594 feet, drilled to 3,605 feet in lime, and oil rose 1,500 feet in the hole in 40 minutes. Operators were testing. Location is on a Stanolind Oil & Gas Co. farm-out.

The Silica west pool in Barton County was extended three-fourths mile west at Simpson & Noble No. 1 Dick, NE NW NW section 3-20-11w. It found Arbuckle lime at 3,296 feet, total depth 3,320 feet, was treated with acid and had initial production of 258 bbls. of oil daily. It is separated from the Ellinwood North pool on the south by a dry hole.

Stanolind Oil & Gas Co. No. 1 Bert McComb, SE NE SW section 14-24-11w, was completed early in the past week as the largest producer in the Zenith pool, Stafford County. It made potential of 2,622 bbls. of oil at total depth of 3,821 feet in sand. It extended the Zenith pool one-half mile north and was the eighth well in the area to be completed.

Work was started at a wildcat in Dickinson County at Fred C. Frank and others No. 1 well, in section 11-13-1e. It is about 3 miles west of Abilene and about 25 miles northwest of production in the Lost Springs pool in Marion County.

The market demand for Kansas crude oil in April was estimated at 173,000 bbls. daily by the Bureau of Mines, a decline of 3,700 bbls. from the bureau's estimate for March. Allowable production for March is 169,528 bbls. daily. The April allowable hearing before the Kansas Corporation Commission is scheduled for today, March 24, in Wichita.

Wildcat Completions

Colonial Oil Co. and others No. 1 Hancock, NW SW SW section 21-10-18w, Rooks County wildcat, found Arbuckle lime at 3,665-3,709 feet, total depth, and was dry and abandoned.

Sam Schneider and others No. 1 Sterling College, SE SW SE section 28-20-8w, wildcat in Rice County, was abandoned with water in the hole at 3,482½ feet, total depth. Top of Arbuckle lime was 3,476 feet.

Fred Rust No. 1 Krankenberg, NW cor. section 20-22-12w, wildcat on Stanolind farmout in Stafford County, failed to find production in Arbuckle lime topped at 3,829 feet and was abandoned at 3,842 feet, total depth.

Fain Drilling Co. and others No. 1 Hughes, SE cor. section 13-23-12w, another wildcat on Stanolind farm-out in Stafford County, found Arbuckle lime at 3,787 feet and was dry and abandoned at 3,802 feet.

Cities Service Oil Co. No. 1 Kreie, C NW section 27-23-10w, Reno County wildcat, found Arbuckle lime at 3,975 feet, total depth 4,005 feet, water intruded and it was abandoned.

Cities Service Oil Co. and Atlantic Refining Co. No. 1 Delaney, C S half S half NE section 13-26-12w, wildcat in Pratt County, failed to find oil in Arbuckle lime topped at 4,317 feet and was abandoned at 4,347 feet, total depth.

Olson Oil Co. and others No. 1 Watkins, C SW NW section 23-32-21w, Clark County wildcat, was bottomed at 7,136 feet, plugged back to 6,806 feet, and was abandoned. Arbuckle lime was topped at 6,700 feet.

Russell County

Largest producer of the week completed in Russell County was Texon Oil Co. No. 5 Letsch, CEL W half SW section 26-14-13w, Letsch area. It topped Kansas City lime at 2,796 feet, had pay at 2,820-50 feet, total depth, was acidized, pumped and flowed 747 bbls. of oil in four hours and made potential of 3,240 bbls.

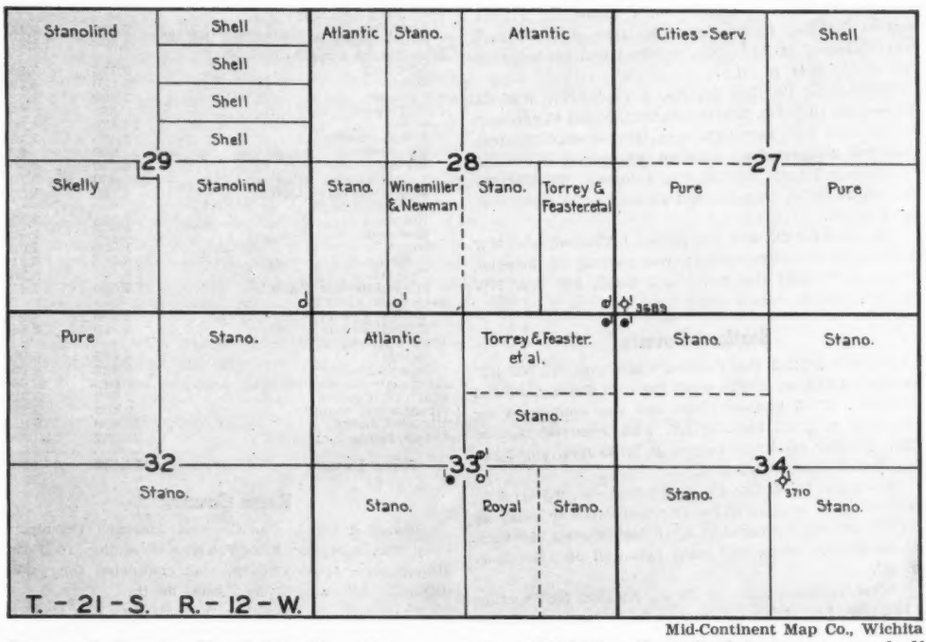
R. H. Shields and others No. 5 Letsch, NE NW SE section 27-14-13w, had Kansas City lime at 2,860 feet, total depth 2,906 feet, was acidized and made potential of 2,894 bbls. of oil.

Magnolia Petroleum Co. No. 2 Rogg, SW SW NE section 27-14-13w, pumped 312 bbls. of oil in four hours after acidizing and made potential of 1,718 bbls. of oil. Kansas City lime was found at 2,862 feet, pay 2,883 feet, total depth 2,886 feet.

Gulf Oil Corp. No. 1 Reinhardt, SW SW SE section 23-11-17w, Bemis district, Ellis County, topped Arbuckle lime at 3,375 feet, total depth 3,382 feet, pumped 473 bbls. of oil in four hours and made potential of 2,839 bbls.

Sinclair Prairie Oil Co. No. 1 Cress, NW SW SW section 18-11-16w, was acidized and shot, pumped 219 bbls. of oil in three hours and made potential of 1,614 bbls. of oil. Arbuckle lime was found at 3,411 feet, total depth 3,426 feet.

Carter Oil Co. No. 1 Weisner, SE cor. section 11-12-18w, had Arbuckle lime at 3,618 feet and was bottomed at 3,622 feet. It was acidized, pumped 258 bbls.



Mid-Continent Map Co., Wichita

Torrey & Feaster No. 1 Mueller, SE cor. section 29-21-12w, Stanolind farm-out, one-half mile northwest of Sittner Arbuckle production in Stafford County, had 1,500 feet of oil in the hole and was testing

Ellis County

Karlyn Oil Co. No. 5 Rumsey, NW SW SW section 19-14-14w, Arbuckle lime at 3,229 feet, total depth 3,238 feet, pumped 60 bbls. of oil and 3 bbls. of water in four hours and made potential of 360 bbls. of oil, with 18 bbls. of water.

Phillips Petroleum Co. No. 1 Brandenburg, NW NW NE section 30-14-14w, found Arbuckle lime at 3,230 feet, was bottomed at 3,240 feet, pumped 273 bbls. of oil in four hours and made potential of 1,325 bbls. of oil, with 6 per cent water.

Cities Service Oil Co. No. 1 Ehrlich B, NE NE NW section 30-14-14w, was treated with acid and made potential of 538 bbls. of oil. Top of Arbuckle lime was 3,218 feet, total depth 3,230 feet.

Smoky Hill Oil Corp. No. 4 Miller, NW NW NE section 31-14-13w, an old well bottomed at 2,982 feet, was deepened to Gorham sand at 3,215 feet, total depth 3,142 feet, and made new potential of 1,830 bbls. of oil. Old potential was 749 bbls. of oil.

Gulf Oil Corp. No. 1 Kauffman, C E half NW SW section 22-15-12w, was a rig. Simon Lebow No. 1 Furthmeyer, SE cor. section 22-14-15w, was a location. Stanolind Oil & Gas Co. No. 13 Baxter, SE NE NW section 5-14-15w, was a location.

of oil in four hours and completed for potential of 1,539 bbls.

Phil-Han Oil Co. No. 1 Richards, SW SE NW section 5-11-18w, found Kansas City lime at 3,308 feet, pay 3,345 feet, total depth 3,378 feet and made potential of 1,756 bbls. of oil.

New work in Ellis County: Champlin Refining Co. No. 2 Glatheart, SW NW SE section 29-11-17w, Bemis area, building rotary rig; J. J. Hall No. 1 Smith, SE SE NW section 14-12-16w, old well in Blue Hill area, deepened from 3,385 feet to 3,409 feet, water intruded and it was plugged back to Kansas City lime; Vickers Petroleum Co. No. 1 Ubert, SW SW SE section 1-13-18w, Ubert pool, location; Magnolia Petroleum Co. No. 12 Johansen, SE SE NE section 22-11-17w, moving in material.

Barton County

Shell Petroleum Corp. No. 1 Burmeister, SW NW SE section 3-17-11w, largest Barton County producer of the week, found Arbuckle lime at 3,292 feet and was completed at 3,312 feet, total depth. It was acidized, pumped 430 bbls. of oil in four hours and made potential of 2,457 bbls.

T. C. Johnson No. 6 Bitter, SE SE SW section 8-16-13w, pumped 327 bbls. of oil in the first four hours

after acidizing and made potential of 1,968 bbls. of oil. Top of Arbuckle lime was 3,381 feet, total depth 3,393 feet.

Gulf Oil Corp. No. 1 Stueder, NW NW SE section 10-17-11w, had Arbuckle lime at 3,272 feet, was bottomed at 3,297 feet, treated with acid, pumped 320 bbls. of oil in eight hours and made potential of 899 bbls. of 45-gravity oil.

First reports of new activity in Barton County: Stanolind Oil & Gas Co. No. 2 Thomas, SW cor. section 35-19-11w, rotary rig; same company's No. 10 Panning, NE NE SE section 2-20-11w, rigging up rotary; same company's No. 2 Rose, NE cor. section 3-20-11w, rigging up rotary; Magnolia Petroleum Co. No. 6 Roetzel, NW NE NE section 25-20-11w, set surface casing at 140 feet; Indian Territory Illuminating Oil Co. No. 1 Bryant, SE NE NW section 25-20-11w, rigging up rotary; Atlantic Refining Co. No. 1 Soderstrom, NE NE SW section 21-17-13w, location; Helmerich & Payne No. 5 Stettinger, SE NW NE section 1-16-14w, rig; same operators' No. 4 Stettinger, SE SW NE section 1-16-14w, set 10-inch casing at 375 feet; Texas Co. No. 3 Disque, SE NE SW section 3-17-11w, location.

Rice County

Continental Oil Co. and others No. 2 Pickerill, SE SW SE section 13-18-8w, Geneseo area, Rice County, found Arbuckle lime at 3,219 feet, total depth 3,232 feet, pumped 359 bbls. of oil in four hours and made potential of 2,157 bbls.

Saco Oil Co. and others No. 4 Foote, SE SE NE section 7-20-9w, found Arbuckle lime at 3,276 feet, was bottomed at 3,281 feet, acidized and made potential of 677 bbls. of oil.

McPherson Drilling Co. No. 3 Yaple, NW NW SE SE section 10-21-7w, Wherry district, found Conglomerate at 3,369 feet, pay 3,375 feet, total depth 3,393 feet, and was completed as a 15-bbl. pumper.

Sinclair Prairie Oil Co. No. 7 Bolton, NE SW SW section 31-18-7w, was dry and abandoned at 3,282 feet, total depth.

Marylyn Oil Co. and others No. 1 Vincent, NW NW NE section 5-21-10w, wildcat, was moving in material. Republic Natural Gas Co. No. 2 Oden, SW NW NW section 5-21-7w, was a rig.

Stafford County

Stanolind Oil & Gas Co. No. 1 McComb, SE NE SW section 14-24-11w, Zenith pool, Stafford County, flowed 476 bbls. of oil in four hours and was completed for potential of 2,622 bbls. of oil, with 1,000,000 feet of gas. Misener sand was topped at 3,795 feet, pay 3,807 feet, total depth 3,821 feet.

Stanolind Oil & Gas Co. and others No. 2 Ferris B, NE SE NW section 23-24-11w, had Misener sand at 3,790 feet, was bottomed at 3,810 feet, flowed 382 bbls. of oil in four hours and made potential of 2,294 bbls. of oil.

Same company's No. 1 Hahn, NE NE NW section 14-22-13w, had Arbuckle lime at 3,752 feet, pay 3,759-63 feet, total depth, and made potential of 452 bbls. of oil. It is about 1 mile west of the Drach pool.

New operations in Stafford County: Cardinal Oil Co. and others No. 1 Fischer, SW NW SW section 31-21-12w, wildcat, cellar; Stanolind Oil & Gas Co. No. 1 Hullman, SE SE SW section 11-22-13w, building rotary rig; Continental Oil Co. and Phillips Petroleum Co. No. 1 Curtis, SE cor. section 26-24-13w, wildcat, building rotary rig; Parker Drilling Co. and others No. 1 McComb, SW SW NW section 24-24-11w, rigging up rotary; Stanolind Oil & Gas Co. No. 1 Volker B, NE SE SW section 14-24-11w, location; same company's No. 1 Scheib, SW SW SE section 12-22-13w, rigging up rotary; Stanolind Oil & Gas Co. No. 1 Drach, SE SE SW section 12-22-13w, rigging up rotary; same operator's No. 1 Sittner, SW SW NE section 33-21-12w, rigging up rotary. Torrey & Feaster No. 1 Sittner, SW SE SW section 28-21-12w, pits.

McPherson County

Continental Oil Co. and associates No. 11 Hetzke, SW SE NE section 29-21-1w, Graber pool, McPherson County, found Hunton lime at 3,298 feet, total depth 3,338 feet, was acidized and made potential of 481 bbls. of oil.

Same operators' No. 7 Huxman, CWL E half NW section 29-21-1w, was acidized and made potential of 452 bbls. of oil from Hunton lime at 3,268 feet, total depth 3,291 feet.

Continental Oil Co. and others No. 7 Goering, NW NE SW section 29-21-1w, was a location. Same operators' No. 5 Graber, C W half W half SE section 29-21-1w, was a location.

Ellsworth County

The Stoltenberg pool in Ellsworth County was extended three-fourths mile northwest at Colonial Oil Co. No. 1 Hagy, NW NW SW section 16-16-10w. It topped Arbuckle lime at 3,329 feet, had pay at 3,340-42 feet, total depth, was acidized, pumped 302 bbls. of oil in five hours, reacidized and made potential of 1,219 bbls. of oil.

Continental Oil Co. and others No. 2 Ploog-A, C S half S half SW section 27-17-8w, found Arbuckle lime at 3,244 feet, total depth 3,254 feet, pumped 296 bbls. of oil in the first four hours and made potential of 1,668 bbls.

Continental Oil Co. and others No. 7 Rolfs, CNL NW section 34-17-8w, Edwards area, was building rotary rig.

Estimated Daily Production

Estimated daily production for Kansas for the week ending March 19, and for the preceding week, was as follows:

	Barrels	
	Mar. 19	Mar. 12
Oxford City	2,000	1,950
Burrton	11,475	11,250
Ritz-Canton	6,500	6,475
Graber	2,450	2,200
Hollow-Nikkel	3,750	3,675
Lerado	975	1,300
Voshell	3,050	2,975
Wellington	2,300	2,350
Ellsworth County:		
Lorraine	2,790	2,425
Other pools	1,500	1,245
Rice-Barton counties:		
Bloomer	2,775	2,700
Chase	5,130	5,725
Geneseo	1,990	2,025
Raymond	830	1,250
Silica	14,870	14,700
Silica—South	2,475	2,450
Keesling	900	975
Wherry	4,750	4,800
Miscellaneous Rice	3,860	3,700
Miscellaneous Barton	4,480	4,050
Russell County:		
Fairport	1,815	1,580
Gorham	1,720	1,620
Russell	1,580	2,039
Sullivan	8,065	6,211
Trapp	8,320	9,265
Miscellaneous Russell	7,660	7,410
Sedgwick County:		
Valley Center	1,060	1,035
Miscellaneous	2,860	2,865
Ellis County:		
Bemis	5,665	6,050
Miscellaneous	2,835	4,250
Kingman County	648	650
Stafford County	2,535	3,220
Greenwood County	9,400	9,250
Butler County	16,000	16,050
Other fields	23,037	23,385
Total Kansas	172,050	173,100

Reno County

Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 6 Hilger A, NW SW NW section 16-26-4w, Hilger pool, Reno County, was completed for water disposal well at 4,337 feet, total depth.

New work in Reno County: Salt City Gas Co. No. 1 Yoder, SE cor. section 28-24-5w, location; McPherson Drilling Co. No. 1 Welch, NE NE NW section 9-24-4w, rig; Ballard & Wallace No. 1 Brown, SE SE SW section 4-24-4w, rig; J. C. Foulds No. 1 Nen, C S half SE SE section 33-23-9w, pits; Transwestern Oil Co. No. 5 Teten, SE SW NE section 12-23-4w, location.

Butler County

Allbe Oil Co. No. 22 Wilson, C N half NW NE section 27-25-5e, Butler County, had Arbuckle lime at 3,624-33 feet, total depth, and was completed for 35 bbls. of oil daily.

Isador Molk No. 12 Loomis, SW NW SW section 15-27-4, was drilling at 2,035 feet. Cities Service Oil Co. No. 23 Hamilton, NW SE NE section 14-26-4, was a location. Richmond Drilling Co. No. 1 Bausinger, NE SE SW section 23-27-3, was bottomed at 938 feet.

Greenwood County

Arthur Lyke No. 7 Beauchat, C W half W half SE section 5-24-12, Greenwood County, found Mississippi lime at 1,740 feet, pay 1,760 feet, total depth 1,775 feet. It was shot and pumped 20 bbls. of oil daily.

Pioneer Oil Co. No. 1 Edwards, NW SW NE section 7-26-10, spudded and was abandoned.

F. Fullerton No. 1 Cook, SW NE NW section 14-24-10, was a machine.

Stevens County

Kuhn Brothers No. 1 Carpenter, C NW section 20-33-36w, Hugoton area, Stevens County, was bottomed at 2,810 feet, and produced 18,000,000 feet of gas daily after acidizing.

Additional New Work

In Cowley County, Arthur Brewer No. 2 Clark, SW SW NE section 6-31-4, was rigging up; C. E. Roth and others No. 1 Gretsinger, NE cor. section 15-31-4, was rigging up machine; Earl Wakefield No. 2 Whitten, NE NW SE section 8-32-4, was a cellar; same operator's No. 3 Wilson, SE NE NW section 4-32-3, was a location.

In Harvey County, E. J. Shaffer and others No. 1 Wilson, C SW NW section 20-23-3w, was a cellar; Magnolia Petroleum Co. No. 6 Schmidt, NW SW NE section 30-22-3w, was drilling below 3,245 feet.

In Dickinson County, Fred Franks and others No. 1 Huffman, NW NW SW section 11-13-1e, wildcat, was building rig.

In Rush County, Schermerhorn, Winton and others No. 1 Strong, CEL SW section 26-18-16w, Otis sector, was a rotary rig.

In Sumner County, Saco Oil Co. and others No. 1 Phipps, SW SE NE section 24-30-1w, wildcat, set surface casing at 160 feet; Hapenny and others No. 1 Evers, SE SE NE section 27-31-2e, an old wildcat, was being deepened.

In Woodson County, Ward McGinnis No. 7 Weide, NE NE SE section 31-23-15, was a location.

In Ford County, Sinclair Prairie Oil Co. No. 1 Young, C S half S half NE section 34-27-21w, was a location.

In Grant County, Panhandle Eastern Pipe Line Co. No. 1 Howell, C NW section 16-29-36w, set 10-inch casing at 265 feet.

In Meade County, Bryant West No. 1 Brown, NE NE SW section 5-33-27w, had spudded.

N. Y.-Penn. Gas Fields

COUDERSPORT, Pa., Mar. 21.—Corrected information on the depth of the 5,500,000-foot gasser completed by Ward Wasson on the R. B. Hall farm, Genesee Township, Potter County, Pennsylvania, last week places the total depth at 5,319 feet, top of the Onondaga at 5,275 feet and top of the Oriskany at 5,307 feet. The initial rock pressure was 320 pounds.

A new location was reported during the past week. John Becker is moving in equipment to drill on the Riley Brothers farm in Willing Township, Allegany County, New York. The location is 150 feet from the north and west farm lines.

Pennsylvania Operations

McKenry and others recovered tools lost at 4,429 feet on the Stellman farm, Rockland Township, Venango County, late Friday afternoon and will resume drilling this week. This wildcat test is now drilling in the Marcellus and should reach the Onondaga within the next week or so.

Only one of the seven other Pennsylvania tests is drilling at present. That is the New York State Natural Gas Co. test on the W. A. Simmons farm, Brookfield Township, Tioga County, now down to 1,760 feet.

French and others are shut down at 4,900 feet on the H. O. Perry farm, Genesee Township; Williamsport Oil & Gas Co. has a location 350 feet from the west and midway between the north and south lines of the U. B. Russell farm, Sharon Township; New Penn Development Corp. is moving in for another West Branch Township test on the James Hill farm, and Hanley & Bird have a location on the Flora Rooks farm, Harrison Township, the extent of present Potter County operations. Evjen and others remain shut down at 4,553 feet on the Dusenberry farm, Watson Township, Warren County.

New York Operations

New York State Natural Gas Co.'s test on the Lyle Wheatcraft farm, deepest of the present Woodhull Township, Steuben County, operations, drilled through the Tully at 3,043-95 feet during the past week and is now at 3,115 feet.

In other Woodhull field drilling, G. L. Cabot, Inc., is at 385 feet on the C. Groves No. 2 farm (elevation 1,879 feet) and at 170 feet on the Neva Husted farm (elevation 1,608 feet); Sylvania Corp. is reaming to set casing at 614 feet on the H. Hand No. 2 farm; New York State Natural Gas Co. is drilling at 388 feet on the Park Estate farm; New Penn Development Corp. is drilling at 125 feet on the M. K. Hustead farm, and Clancy and others have the rig up on the R. Towsley farm.

(Continued on Page 97)

California Field Report

By L. P. STOCKMAN

1,000 Barrels Per Hour From Long Beach Harbor New Well

LOS ANGELES, Calif., Mar. 21.—Drilling operations in the Wilmington field in the past week resulted in the completion of eight wells which showed an aggregate initial daily production of 28,488 bbls., and another group of wells may be expected this week with a consequent increase in the field's potential daily production. The Long Beach Harbor section has proven by far the most prolific part of the Wilmington field and the future potential depends almost entirely upon the rate of development there. The situation has reached the point where operators must either severely reduce the amount of drilling or reduce production to a minimum. There are at least 10 wells in the Long Beach Harbor section of the field scheduled for immediate completion and it is quite obvious that the field's potential will be substantially increased upon their completion before the close of another fortnight. Union Pacific Railroad Co. should complete four of this group and General Petroleum Corp. and Superior Oil Co. two each. In addition to these scheduled completions, there are a number of other potential producers which should normally be completed within two weeks and it is therefore quite probable that completions will average at least one per day during the coming fortnight.

Westgate-Greenland Oil Co. No. 2 Long Beach Harbor Department lease A, was completed flowing at the rate of 1,000 bbls. per hour. This well was beaned back immediately subsequent to completion, and is being credited with an initial daily production of 6,580 bbls. This well, which is producing from both the upper and lower Terminal zones, was bottomed at 3,885 feet and finished with 1,701 feet of 8⅝-inch liner landed on bottom. This liner was perforated at 2,860-3,345 feet and at 3,380-3,885 feet and cemented through perforations at 2,860 feet and 3,380 feet. This well, which is capable of producing far in excess of its initial flow, is producing clean 26.9-gravity oil. Westgate-Greenland Oil Co. also completed No. 1 on the same lease flowing 4,510 bbls. of exceptionally clean 27.1-gravity oil per day from 3,886 feet. It was finished with 1,694 feet of 8⅝-inch liner carrying 80-mesh perforations at 2,852-3,340 feet and at 3,380-3,884 feet and was cemented through perforations at 2,850 feet and 3,338 feet. This company has completed four wells on the Long Beach Harbor Department's lease A, and they registered an aggregate initial production of 22,080 bbls.

Hancock Oil Co. completed No. 6-E Harbor flowing 6,685 bbls. of clean oil per day of which 1,250 bbls. is coming from the Ranger zone. This well, bottomed at 4,023 feet, was finished with an 8⅝-inch liner carrying perforations at 2,320-2,771 feet and at 2,856-4,023 feet and was cemented through perforations at 2,856 feet. No. 3-A Harbor and No. 5-A Harbor are in the pay. Richfield Oil Corp. completed No. 2 Richfield Terminal flowing 348 bbls. of clean 17.2-gravity oil daily from 3,026 feet. It was finished with 310 feet of 6⅝-inch liner including 271 feet of perforated landed at 3,025 feet, a 5-inch flow string hung at 2,705 feet and 2,770 feet of 3-inch tubing.

Long Beach Harbor Oil Co. completed No. 2 Cedarholm flowing 6,560 bbls. of a composite 26.9-gravity oil from the Ranger and upper and lower Terminal zones. It established a potential of 8,000 bbls. per day of which the Ranger zone produced 800 bbls. No. 2 Cedarholm was bottomed at 3,790 feet and has the usual hook-up for a multiple zone completion. The cementing points were through perforations at 2,838 feet and 3,350 feet.

General Petroleum Corp., discoverer of the Wilmington field, completed two new wells and will complete several more within the next few days. No. 36 Ford Motor Co. flowed 1,240 bbls. of clean 21.1-gravity oil daily from a depth of 3,000 feet. This is one of the best Ranger zone completions listed in several weeks. The company's No. 5 Harbor Community was completed flowing 2,385 bbls. of relatively clean 27.8-gravity oil daily from the lower Terminal zone at 3,900 feet after the hole had been finished with a 6⅝-inch and 8⅝-inch combination assembly. The 8⅝-inch extends to 2,875 feet and the 6⅝-inch extends from 2,875 feet to bottom, 3,900 feet. Perforations are at 2,452-2,785 feet, 2,915-3,325 feet, 3,365-3,610 feet and at 3,650-3,900 feet and the well was cemented through perforations at 2,915 feet and 3,365 feet.

The Texas Co. completed its second well in the southern part of the Wilmington Refinery property pumping 180 bbls. of 15.2-gravity oil daily from 3,472 feet. No. 2 Refinery was finished with 388 feet of 6⅝-inch liner including 336 feet of 80-mesh screen and gravel packing.

Richfield Oil Co. No. 1 Gurnsey, a deep test of the Long Beach Harbor section of the Wilmington field, found the Ford and Terminal zones barren and the hole is being plugged back from 6,078 feet to 2,900 feet for completion in the Ranger zone.

Rio Bravo

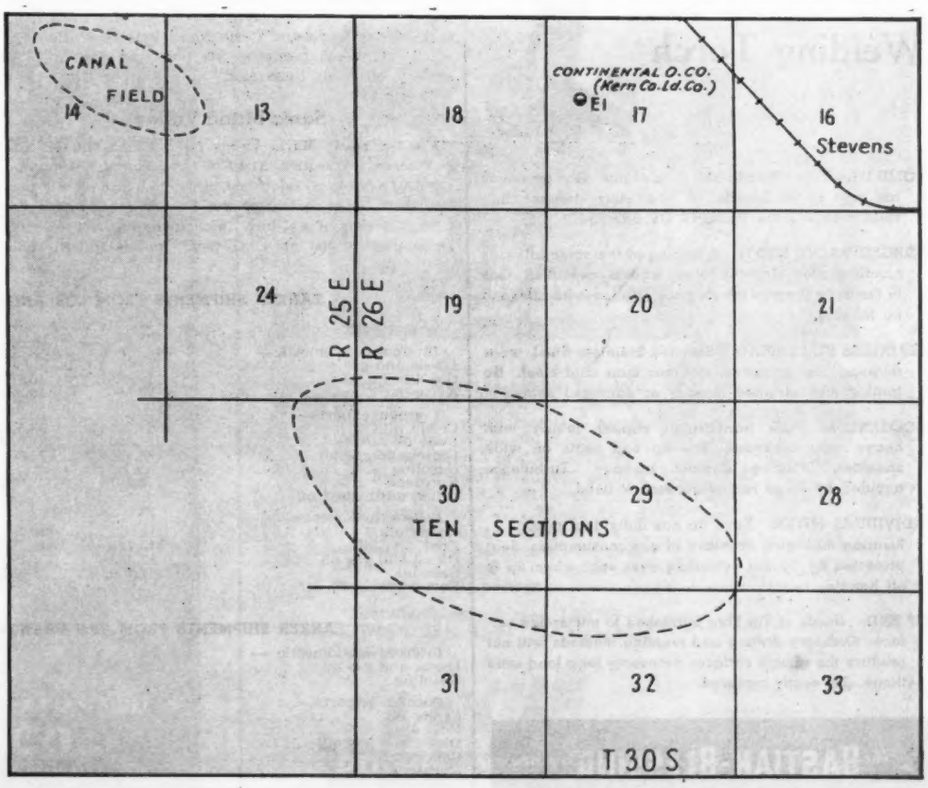
Union Oil Co. has scheduled No. 2-34 Kern County Land in the Rio Bravo field of Kern County for completion within 10 days and in accordance with the program adopted is running in a string of casing to be landed at its present bottom 11,200 feet. The company did not wait to core the pay before landing the water string due to the proximity of this well to the discovery. No. 2-34 Kern County Land will be drilled ahead another 100 feet and completed within the prescribed time. The company will drill a third well in the Rio Bravo field and has accordingly purchased heavy equipment and an oversized derrick to facilitate drilling operations.

Superior Oil Co., due to the decision of operators in the Rio Bravo field to restrict crude oil production to 450 bbls. per day for each well irrespective of potentials, decided to list No. 1 Wagner as a completion at 11,265 feet instead of resuming work and carrying the hole down to approximately 11,300 feet. Superior No. 1 Wagner did not show an initial production comparable with that shown by Union Oil Co. discovery well due to the fact that the former only took in 19 feet of formation. This limited penetration was enough to permit the well to produce above the stipulated maximum, or 450 bbls. per day, and Superior field department decided to let well enough alone. Superior Oil Co. is expected to complete three additional wells in the Rio Bravo field within the next 30 days and lease requirements call for additional development at regular intervals. This will necessitate additional development on the Wagner lease in section 35-28-25, on the Ruhl lease in section 1-29-25, and on the Geissinger lease in section 32-28-25 during the current year. Superior Oil Co. No. 1 Wagner, completed last week flowing 750 bbls. per day from 11,265 feet, is at present flowing 460 bbls. of 38.8-gravity oil and 600,000 feet of gas per day through a 13/64-inch bean.

Getty Oil Co. and General Petroleum Corp. should have their respective drilling projects in the Rio Bravo field ready for production tests around April 15.

Greeley

In the Greeley field of Kern County, Standard Oil Co. is expected to complete five new wells within the



Continental Oil Co. has staked location for a wildcat to be drilled on property leased from Kern County Land Co. in the Stevens district of Kern County a few miles east of the Canal field and north of the Ten Section district

REGO

GX

The *Universal* Welding Torch

SOLID HANDLE: A solid unit . . . no tubes. Gas passages are part of the handle. A new alloy stronger than steel with 1/3 the WEIGHT OF BRASS.

FORGED VALVE BODY: A forging of the same alloy as handle section. Generous sized wheels assembled close to the body prevent interference. No loose handles . . . no leaking.

STAINLESS STEEL HEAD: Selected Stainless Steel, wear resisting, non-corrosive, stronger than mild steel. No trouble with stripped threads or damaged seats.

GOOSENECK: Pure hard-drawn copper tubing with heavy wall thickness. The tip end seats on wide shoulder, insuring against leakage. Turbulence avoided by large radius gooseneck bend.

INDIVIDUAL MIXER: Each tip has individual mixer . . . insuring maximum economy in gas consumption. Seat protected by tip nut extending over seat when tip is off handle.

TIP END: Inside of Tip bore burnished to mirror-like surface. Ordinary drilling and reaming methods will not produce the smooth surfaces necessary for a long cone flame. Tip easily replaced.

The BASTIAN-BLESSING Company
288 E. Ontario St.
Chicago, Ill.

next 30 days and may also be in a position to determine the possibility of developing commercial production below the present productive zone. The company's No. 11-2 Kern County Land, a deep test in section 20-29-26, is at present rotating in a hard gray sand at 10,310 feet. This well, which failed to develop commercial production in the upper, is being carried on down in search of the Rio Bravo zone which may possibly exist below the present productive Stevens sand. Standard Oil Co. made a formation test in No. 1 Calder Klassen that indicated a potential flow of 700 bbls. of oil and 300 bbls. of water. This well, in section 20-29-26, is bottomed at 7,794 feet and plugged back to 7,750 feet. The water may be the result of a mechanical condition as a hole had been found in the 9-inch water string landed at 7,680 feet. Standard's next completion in the Greeley field was expected to be No. 11-13 Kern County Land as it logged top of the oil sand at 7,657 feet and has a 9-inch water string cemented at 7,645 feet. Southeast of the Greeley field, Superior Oil Co. redrilled No. 9 Kern County Land in section 3-30-26 to 7,800 feet and is making preparations to run a formation test. It flowed for several days at the rate of 750 bbls. daily from 7,870 feet but showed an abnormally high decline and later went to water. The company set a whipstock and by directional drilling placed the bottom of the hole north and east of the surface location. No. 9 Kern County Land showed enough to justify additional exploration work and the company will therefore start at least one additional well if the present test proves inconclusive. Some time ago the company abandoned a wildcat approximately two locations southwest of No. 9 Kern County Land and thus the limits of the possible accumulation in this area are defined in that direction.

Ten Section

Shell Oil Co., in the Ten Section field of Kern County, completed No. 8-29-A Kern County in section 29-30-26, flowing 3,270 bbls. of clean 35.4-gravity oil and 3,210,000 feet of gas per day from 8,220 feet. Last week Shell Oil Co. completed No. 41-32-B Kern County Land flowing 2,425 bbls. of 31.9-gravity oil and 1,790,000 feet of gas per day from 8,216 feet. This well established a sustained flow of 2,220 bbls. of very clean crude oil before being pinched back.

Round Mountain

Two small wells were completed in the older section of the Round Mountain field. California Western Oil Co. No. 10, in section 12-28-28, was finished pumping 290 bbls. of 15.7-gravity oil daily from 1,838 feet, and Vedder Petroleum Corp. No. 2 Bell, in section 12-28-28, completed pumping 288 bbls. per day of 15.6-gravity oil from 1,926 feet.

Santa Maria Valley

In the Santa Maria Valley field, Union Oil Co. No. 2 Vicente, in section 21-10-34, was completed pumping 1,071 bbls. of relatively clean 15.9-gravity oil per day from 4,986 feet after the hole had been finished with 336 feet of 6⅝-inch liner including 311 feet of perforated landed at 4,984 feet. Top of the Sisquoc was logged at 3,823 feet and top of the productive Monterey was cored at 4,673 feet. No. 2 Wylie of the Hancock-Bush interests was completed pumping 546 bbls. of clean 15.1-gravity oil daily from 4,650 feet after the hole had been carried down to 4,813 feet and then plugged back.

Long Beach

In the older section of the Long Beach field, Richfield Oil Co. No. 4 Bixby was completed flowing 495 bbls. of clean 24.2-gravity oil per day from 4,225 feet after the hole had been finished with 129 feet of 6⅝-inch liner including 110 feet of perforated landed on bottom. This well was completed on the beam earlier in the week pumping 568 bbls. per day but after getting under way it cleaned itself out and began flowing. It is flowing through a 32/64-inch bean and shows a tubing pressure of 125 pounds and a casing pressure of 700 pounds. The well is in an area that has been productive for about 16 years. Out in the northwest extension of the Long Beach field, Hilldon Oil Co. completed No. 2 Flood Control pumping 535 bbls. of clean 23.7 gravity oil daily from 4,180 feet.

Rosecrans-Dominguez

In the Rosecrans field of Los Angeles Basin, Union Oil Co. completed No. 18 Rosecrans flowing 760 bbls. of clean 37.8-gravity oil per day from 7,630 feet after the hole had been finished with a 5¾-inch Hydril flush-joint liner including 330 feet of 120-mesh Kobe screen landed at 7,629 feet. This deep zone was found highly productive by Barnsdall Oil Co. early in 1937 and both that company and Union Oil Co. have completed several excellent producers. The new zone is located in rocks of Miocene age but appears to be confined to the top of the structure which is controlled by Barnsdall and Union. No. 18 Rosecrans, which is making 900,000 feet of wet gas in addition to the oil, was brought in flowing through a 56/64-inch bean under a tubing pressure of 175 pounds and a casing pressure of 675 pounds. The well cleaned up rapidly and within 24 hours the cut was substantially below 1 per cent. Location has been staked for No. 19 Rosecrans west of Broadway and north of Rosecrans Avenue and the authorization for drilling should be approved within another few days.

In the Dominguez field, Union Oil Co. completed No. 49 Hellman pumping 205 bbls. of 30.7-gravity oil per day from 6,393 feet after the hole had been carried down to 6,724 feet and then plugged back to the completion depth. In the Torrance field, C. W. Camp completed No. 1 Perkins flowing 212 bbls. of 27.4-gravity oil per day through a 20/64-inch bean under a tubing pressure of 70 pounds and a casing pressure of 110 pounds from 5,020 feet.

San Joaquin Valley

Continental Oil Co. has reached a depth of 14,270 feet in No. 2-A Kern County Land, a wildcat in the Wasco district of Kern County in the San Joaquin Basin, and the bit is still going ahead. Showing of oil and gas on the ditch during the past 100 feet have not been regarded of any great significance as core samples reveal the formation to be a hard gray shale.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	March 11		March 4			
	Total this week	Daily average	Total last week	Daily average	This week to date	Same time last year
Intercoastal-domestic—						
Diesel and gas oil	.....	.....	.....	.....	.....	176,726
Gasoline	117,380	16,769	.....	.....	461,496	286,012
Kerosene	72,690	10,384	.....	.....	132,575	.....
Foreign exports—						
Crude oil	654,709	93,530	735,080	105,013	4,481,797	2,069,847
Fuel oil	217,339	31,048	330,907	47,272	1,458,558	2,476,364
Diesel and gas oil	183,856	26,265	94,248	13,464	938,425	1,404,411
Gasoline	.....	.....	135,489	19,356	1,026,079	1,114,551
Kerosene	2,291	327	.....	.....	168,453	588,107
Other unfinished oil	.....	.....	.....	.....	.....	156,531
Coastwise-domestic—						
Crude oil	214,961	30,709	223,067	31,877	2,062,061	1,103,317
Fuel oil	345,726	49,389	149,005	21,272	2,619,865	2,852,661
Diesel and gas oil	22,363	3,195	33,145	4,735	305,323	505,998
Gasoline	267,760	38,251	406,187	59,027	2,765,187	2,138,951
Kerosene	.....	.....	.....	.....	42,756	28,295

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic —						
Diesel and gas oil	.....	.....	.....	.....	178,662	152,932
Gasoline	.....	.....	.....	.....	.....	25,778
Foreign exports—						
Crude oil	.....	.....	104,217	14,888	760,177	681,168
Fuel oil	.....	.....	95,880	13,697	256,214	254,876
Diesel and gas oil	.....	.....	31,108	4,444	181,973	619,304
Gasoline	.....	.....	185,316	26,474	878,417	1,248,634
Kerosene	.....	.....	.....	.....	110,450	165,359
Lubricants	.....	.....	44,474	6,353	82,632	140,991
Coastwise-domestic—						
Fuel oil	169,177	24,168	72,612	10,373	1,308,459	1,350,278
Diesel and gas oil	18,605	2,658	.....	.....	351,406	108,023
Gasoline	130,214	18,602	103,341	14,763	1,311,924	928,143
Kerosene	20,986	2,998	.....	.....	175,083	21,509

STANDARD OIL CO. OF CALIFORNIA AND UNION OIL CO

Crude oil prices at the well effective June 22, 1936

Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Domingues	Elwood Terrace	Torrance	Richfield	Whittier El Coyote (La Habra)	Montebello	W. Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills Buena Vista Hills Midway-Sunset Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills	Santa Paula*	Orcutt*
14-14.9	$.80	$.79	$.74	$.78	$.79	$.80	$.76	...	...	...	$.80	$.76	$.76	$.77	$.78	...	...	$.70	$.70	$.70	...	...	$.70	...
15-15.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.70	...
16-16.9	.80	.79	.74	.78	.79	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.70	$.70
17-17.9	.80	.79	.74	.78	.81	.80	.76	...	...	...	.80	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.71	.70
18-18.9	.80	.79	.74	.78	.84	.80	.78	...	...	...	.82	.76	.76	.77	.78	...	...	.70	.70	.70	...	...	.73	.72
19-19.9	.82	.79	.74	.82	.87	.84	.81	...	...	...	.85	.76	.78	.77	.78	...	$.70	.74	.74	.71	$.70	...	.75	.74
20-20.9	.85	.79	.74	.85	.90	.88	.84	...	...	...	.88	.78	.82	.77	.80	...	.70	.78	.78	.72	.70	...	.77	.77
21-21.9	.88	.79	.74	.89	.93	.93	.88	...	...	...	.91	.80	.85	.77	.84	$.78	.73	.82	.82	.74	.70	...	.79	.80
22-22.9	.92	.82	.74	.92	.96	.98	.92	...	...	...	.93	.84	.89	.79	.88	.78	.77	.87	.86	.78	.72	...	.82	.83
23-23.9	.95	.86	.77	.96	.99	1.02	.96	$.84	$.79	...	.96	.88	.93	.82	.92	.78	.80	.92	.90	.82	.76	...	.85	.86
24-24.9	.99	.91	.80	1.00	1.02	1.06	.99	.88	.81	...	.99	.91	.96	.85	.96	.82	.84	.97	.94	.86	.79	...	.87	.88
25-25.9	1.03	.95	.82	1.03	1.05	1.11	1.03	.93	.83	...	1.02	.95	...	.89	.99	.86	.88	1.01	.98	.90	.83	...	.90	.91
26-26.9	1.06	1.00	.85	1.07	1.09	1.16	1.06	.98	.86	...	1.05	.98	...	.92	1.03	.90	.91	1.06	1.02	...	...	...	.92	.93
27-27.9	1.10	1.05	.88	1.11	1.12	...	1.10	1.03	.88	...	...	1.02	...	.96	1.06	.95	.95	1.10	1.06	...	...	...	.95	...
28-28.9	1.14	1.10	.90	1.14	1.15	...	1.14	1.07	.90	...	...	1.06	...	.99	1.10	.99	.99	1.15	1.10	...	...	...	.97	...
29-29.9	1.17	1.15	.93	1.18	1.18	F.O.B.	1.17	1.12	.93	...	...	1.09	...	1.03	1.14	1.03	1.02	1.20	1.14	...	...	...	.99	...
30-30.9	1.21	1.19	.95	1.22	1.21	our	1.21	1.17	.95	F.O.B.	...	...	...	1.07	1.17	1.08	1.06	1.25	1.18	...	...	...	1.01	...
31-31.9	...	...	...	...	1.24	Pipe	1.24	1.22	.97	Ship	...	...	...	1.11	1.21	1.12	1.09	1.29	...	...	...	...	...	...
32-32.9	...	...	...	...	1.27	Line	1.27	1.27	1.00	...	...	...	...	1.14	1.25	1.16	1.13	1.34	...	...	...	...	...	...
33-33.9	...	...	...	...	...	...	...	1.32	...	$1.28	...	...	...	1.18	1.28	1.20	1.17	1.38	...	...	...	$1.19	...	...
34-34.9	...	...	...	...	...	...	...	1.37	...	1.32	...	...	...	1.22	1.32	1.25	1.20	...	...	...	...	1.23	...	...
35-35.9	...	...	...	...	...	...	...	1.42	...	1.35	...	...	...	1.25	...	1.29	...	...	...	...	...	1.27	...	...
36-36.9	...	...	...	...	...	...	...	1.46	...	1.39	...	...	...	1.29	...	1.33	...	...	...	...	...	1.31	...	...
37-37.9	...	...	...	...	...	...	...	1.51	...	1.43	...	...	...	1.32	...	1.37	...	...	...	...	...	1.35	...	...
38-38.9	...	...	...	...	...	...	...	1.56	...	...	...	...	...	1.36	...	1.42	...	...	...	...	...	1.39	...	...
39-39.9	...	...	...	...	...	...	...	1.61	...	...	...	...	...	1.40	...	...	...	...	...	...	...	1.43	...	...
40-40.9	...	...	...	...	...	...	...	1.66	...	...	...	...	...	1.43	...	...	...	...	...	...	...	...	...	...

Newhall, McKittrick, Kern River, Kern Front and Round Mountain, 70 cents for all grades. *Posted by Union Oil Co. Same company's Brea Canyon schedule stops at $1.14 for 28 degrees and over, and Belridge and Lost Hills schedule stops at $1.32 for 37 degrees and over. By Standard Oil Co., effective October 15: El Segundo, 14 to 18.9 degrees, 80 cents; 19-19.9, 82 cents; 20-20.9, 85 cents; 21-21.9, 88 cents; 22-22.9, 92 cents; 23-23.9, 95 cents; 24-24.9, 99 cents; 25-25.9, $1.03; 26-26.9, $1.06; 27-27.9, $1.10; 28-28.9, $1.14; 29-29.9, $1.17; 30-30.9, $1.21. Wilmington, 14 to 16.9, 75 cents; 17-17.9, 77 cents; 18-18.9, 79 cents; from 19 degrees upward, prices same as Signal Hill.

No decision has been reached at what depth drilling operations will be suspended as much depends upon how soon the formation changes as it is desirable to get through the present shale body in order to determine if the underlying sand contains oil and gas.

In the Midway-Sunset field of Kern County, Formax Oil Co. has completed No. 22 in section 36-22-23, pumping 148 bbls. of 15.7-gravity oil daily from 1,793 feet, and Otis Hoyt completed No. 9 in section 7-11-23 pumping 82 bbls. of 14.9-gravity oil daily from 1,519 feet. In the Kern River field, H. B. Dickey completed No. 1 in section 34-28-28 pumping 6 bbls. of 16.6-gravity oil per day from the shallow depth of 290 feet.

Canadian Oil Investigation Adjourns Until April 4

OTTAWA, Ontario. — Following a further session the Federal Tariff Commission, headed by G. H. Sedgwick, has adjourned its investigation into the marketing of Turner Valley crude until April 4. Meantime, representatives of the Canadian National and Canadian Pacific railways will confer with representatives of eastern Canada refiners regarding freight rates on Turner Valley crude. The attitude of the major refiners in eastern Canada was one of willingness to use Turner Valley crude, provided it could be laid down at a fair competitive price. This price, however, depends very largely on transportation costs.

Tentative arrangements have been made by Turner Valley interests, represented by Robert Wilkinson, for marketing Turner Valley crude to an English refining company. Samples of crude have been shipped to England for testing. Economic marketing is conditional on satisfactory freight rates to tidewater, prices quoted by the English refiners being f.o.b. Vancouver or Churchill, Manitoba.

NOVO

SALES AND SERVICE BY

National SUPPLY COMPANY

NOVO ROTARY DRILLING AUXILIARY OUTFIT . . . A compact, sturdy outfit which generates light for night operations and power for electric tools — Pumps water for washing down — Furnishes air for Diesel engine starting. Generator, Pump and Compressor all driven by a heavy duty four cylinder engine operated on gas or gasoline.

Any National Supply Co. Store for Sales Service and Information

PUMPS • ENGINES • GENERATORS • STARTING UNITS

NOVO ENGINE CO.

240 Porter Street

LANSING · MICHIGAN

From a depth of twelve hundred feet, the latest of three Layne well water supply units installed sends forth 1,500,000 gallons of clear sparkling water daily. The City of Columbia, Mo., enjoyed an annual operating saving of $19,000.00 on their first Layne Pump. As their need for water increased, they, naturally, authorized the installation of other Layne Wells and Pumps. Such savings were too important to overlook.

For literature, address LAYNE & BOWLER, Inc., Dept. O, Memphis, Tennessee.

AFFILIATED COMPANIES

LAYNE-ARKANSAS CO., STUTTGART, ARK.
LAYNE-ATLANTIC CO. . . . NORFOLK, VA.
LAYNE-CENTRAL CO. . . . MEMPHIS, TENN.
LAYNE-NORTHERN CO., MISHAWAKA, IND.
LAYNE-LOUISIANA CO. LAKE CHARLES, LA.
LAYNE-NEW YORK CO. . NEW YORK CITY.
LAYNE-NORTHWEST CO. MILWAUKEE, WIS.
LAYNE-OHIO CO. . . . COLUMBUS, OHIO.
LAYNE-TEXAS CO. . . . HOUSTON, TEXAS.
LAYNE-WESTERN CO., KANSAS CITY, MO. CHICAGO, ILL., MINNEAPOLIS, MINN. AND OMAHA . . . . . NEBRASKA.
LAYNE-BOWLER NEW ENGLAND COMPANY, BOSTON . . . . . MASSACHUSETTS.
INTERNATIONAL WATER SUPPLY, LTD., PORT ERIE, N. . . . ONTARIO, CANADA.

LAYNE

PUMPS & WELL WATER SYSTEMS

FOR MUNICIPALITIES • INDUSTRIES • RAILROADS • MINES AND IRRIGATION

Southwest Texas District

By
F. L. SINGLETON

New Pays and Extensions in Several Pools Are Features

CORPUS CHRISTI, Tex., Mar. 21.—Developments in the Southwest Texas district the past week were featured by extensions and new sand discoveries in several fields in the Corpus Christi and Laredo areas. Fields affected by these new developments included the newly opened West Saxet field, South Clara Driscoll, Agua Dulce and Luby field in Nueces County, the Plymouth field in San Patricio County, all located in the Corpus Christi sector. In the Laredo district, the Benavides field in Duval County and the old Mirando Valley fields in Zapata County were assured of new activity by new sand discoveries.

The discovery of a new sand which will result in a mile south extension to the active West Saxet field, Nueces County, was indicated by Rand Morgan No. 1 fee, due south of the discovery well in Survey 411. The hole is bottomed at 5,865 feet and casing is being cemented for a production test of sand logged by a Schlumberger survey at 5,641-61 feet. The discovery sand, which is the 5,800-foot zone, faulted out and the new sand, which was confirmed by taking side wall cores, is reported to have shown from 12 to 27 per cent saturation.

Offsetting the discovery well to the west, Phillips Petroleum Co. No. 1 Clark, perforated casing at 5,824-27 feet and flowed 13 bbls. of fluid per hour through a 5/32-inch choke. A shake-out test developed 60 per cent salt water and the balance oil. This apparently determines the salt water level for this particular sector of the field and a good producer is expected to be made by plugging back a few feet. Renwar Oil Corp. No. 3 McKinzie, Survey 417, perforated casing at 5,819-24 feet and is flowing 14 bbls. per hour through a 3/16-inch choke. A total of 10 active operations are listed for the field and several new locations were made the past week.

In the South Clara Driscoll field, southern part of the county, Wellington Oil Co. has completed No. 2 Dugger, which has opened a deeper sand. The hole is bottomed at a total depth of 5,505 feet and production was obtained by perforating the casing at 5,340-70 feet. Additional sands showing good indications were logged at 4,648-57 feet, 4,736-48 feet and 5,090 feet. In the Agua Dulce field, Union Producing Co. No. 1 Galladay added another productive horizon when it flowed 36 bbls. of distillate per day through a ¼-inch choke, from perforations at 6,730-40 feet. The well is located several hundred feet from previous development in the Agua Dulce Gardens Subdivision.

Luby's New Sand

In the Luby field, Seaboard Oil Corp. No. 13 Luby, which found a new sand last week at 5,700 feet when it showed several hundred feet of oil on a drill-stem test, has been plugged back and completed through perforated casing at 4,342-45½ feet. The company plans to develop only the 4,300- and 5,000-foot zones and will wait until these sands become depleted before an attempt will be made to develop this new horizon. Same company's No. 15 James Luby perforated casing at 5,066½-71½ feet and flowed 140 bbls. per day through a ½-inch choke.

Plymouth Oil Co. No. 95-C Welder, on the north end of the Plymouth field, San Patricio County, reported last week as opening a new sand, perforated casing at 6,156-59 feet and is flowing at the rate of 10 bbls. per hour through a ¼-inch choke. In the southern part of the county and southeast of the discovery well of the East Point field, George Smith No. 1 French cored sandy shale with an odor of oil at 5,006-08 feet, and sand with an oil and gas odor was logged from 5,010-19 feet. Salt-water sand was cored at 5,028-58 feet.

In the newly opened Alfred field, Jim Wells County, Rowan & Hope No. 2 Adams, 510 feet southwest of the discovery well, tested 50 per cent salt water through perforated casing and is preparing to make a second test from 3,215-20½ feet. Smith & Storey No. 1 Adams, 1,100 feet northeast of the discovery, logged a gas sand at 3,357-62 feet, and 5½-inch casing has been cemented on bottom.

The Keeran and Placedo fields, Victoria County, were apparently joined with the completion of Stanolind Oil & Gas Co. No. 1 Vandenberg, which is showing for a producer after completion through perforated casing in sand at 6,365-72 feet. The well is a half mile southeast of the company's No. 1 Henderson Pickering, a small producer completed several weeks ago, and about 1½ miles from the nearest production in the Keeran field. On a 12-hour gauge the well flowed 40 bbls. of 46-gravity oil through a 3/32-inch choke, with tubing pressure 1,450 pounds and casing pressure 2,125 pounds.

In the Rio Grande Valley area, attention is centered on the deep wildcat of Magnolia Petroleum Co. No. 1 Armendiaz, which is preparing to resume operations after cementing casing at a total depth of 9,635 feet. It is rumored that sand with an oil showing was logged at 9,522-30 feet and that a production test will be made. However, this cannot be confirmed. A Schlumberger survey showed a sand at 9,520-30 feet which recorded 8 ohms resistivity and 30 millivolts porosity.

Laredo District

Interest in the Laredo district is held by the increasing activity getting under way in the old Mirando Valley field, Zapata County, following the discovery of a new sand by Burt Calvin No. 1 Lopez. Sand showing oil was topped at 1,873 feet and cored to a total depth of 1,881 feet, where it was completed with a production of 193 bbls. of 21-gravity oil per day. Kirkwood & Morgan No. 1 Hinnant, a northwest offset, cored oil sand at 1,874-78 feet, and on a 20-minute drill stem test through a ¼-inch choke, it tested 270 feet of pipe line oil and casing has been cemented for a production test. Several locations are planned for immediate drilling.

In the Oilton field, Webb County, Campbell & Killam continue testing No. 6 Thompson, which has the appearance of opening a new sand at 2,473-82 feet. The well is said to be making several barrels of oil daily and the operators are in hopes of increasing the production by recompleting.

In northern Starr County, Wheelock & Collins No. 1 Guerra, Share 20, Santa Cruz grant, blew out March 14 and is still running wild, making an estimated 40,000,000 feet of gas, with a showing of oil and salt water. The well was drilled to a total depth of 6,609 feet and was shut down waiting for orders when the blowout occurred. Several high-pressure gas sands had been logged below 6,000 feet. Late in the week the hole is reported to have bridged, which has controlled the flow to some extent.

Circle Oil Co. No. 2 West, Santos Flores grant No. 25, Benavides field, Duval County, made an excellent showing in the 4,500-foot sand, and casing was cemented for a production test. Sand showing oil was logged at 4,537-52 feet, and casing was cemented at 4,532 feet. This sand has been logged by a number of tests, but so far no well has been completed in it.

Several wildcats in the Balcones fault line district were being watched. In Bexar County, Culver & Bender No. 1 Peterson, 5 miles southwest of MacDona, topped the Anacosha lime at 1,231 feet and was cored to a total depth of 1,285 feet. The hole was swabbed and it showed a small amount of oil before the hole bridged over. The bridge is being cleaned out and swabbing will be continued. In Maverick County, Wellington Oil Co. No. 1-A Chittim, I.&G.N. Survey, is drilling in lime at 3,243 feet after it failed to make a producer in the Buda lime at 2,698 feet.

In Medina County, D. K. J. Oil Co. No. 1 Burrell, Mary E. Gage Survey, 6 miles northeast of Castroville, logged an oil showing in sand at 2,039 feet and 2-inch tubing was run to 2,023 feet. The well is being swabbed through the tubing. This test was originally started by J. B. Scroggins, who abandoned the hole in 1933. Approximately 12 miles south of D'Hanis in the V. N. Johnson Survey, a production test is being made at Trentman Oil Corp. No. 1 Carle, which is reported to have logged an oil showing in lime formation at 1,840 feet.

COMPLETED WELLS

Completed wells in proven Southwest Texas fields, with their total depth and the initial 24-hour production of the producing wells were as follows:

Aransas County

McCampbell field: Atlantic Refining Co. No. 12-B Porterfield, 7,259 feet, perforated casing 6,870-74 feet, 259 bbls., 3/16-inch choke.

Caldwell County

Burdette Wells field: F & W Drilling Co. No. 3-A Rosenberg, 2,242 feet, 8 bbls. per hour, 5/16-inch choke.

Duval County

Benavides field: Standard Oil Co. of Kansas No. 2 Rossi, 5,338 feet, 81 bbls., 9/64-inch choke. Southwood Oil Co. No. 5 Rossi, oil sand 5,334-53 feet, 194 bbls., ¼-inch choke. Southwood Oil Co. No. 1 Walstad, 5,371 feet, 242 bbls., ¼-inch choke. Driscoll field: Continental Oil Co. No. 21-A Sevier, 3,365 feet, 135 bbls., ⅜-inch choke. Government Wells field: Humble Oil & Refining Co. No. 50 White, 2,329 feet, 47 bbls., pumping. Hoffman field: Cox & Hamon No. 3 Cuellar, 2,807 feet, 40 bbls., jetting. Piedra De Lumbre field: Magnolia Petroleum Co. No. 24 Duval County Ranch Co., oil sand 2,052-63 feet, 75 bbls., jetting. Seven Sisters field: A. J. Brinkoetler No. 10-A Garza, oil sand 2,491-95 feet, 100 bbls., pumping. Reynosa Oil Co. No. 3 Welder, 2,724 feet, abandoned. Sweden field: Hiawatha Oil & Gas Co. No. 4 Miller, 5,995 feet, plugged back depth 5,830 feet, 19 bbls., 5/32-inch choke.

Hidalgo-Starr Counties

Sam Fordyce field: H. J. Porter No. 2 Flores, 3,348 feet, perforated casing 3,183-88 feet, gas well.

Karnes County

South Burnell field: Luling Oil & Gas Co. No. 22 Boyce, 3,664 feet, gas well.

Live Oak County

Ezzell field: E. M. Jones No. 7-B Ezzell, 1,458 feet, 9 bbls., 24/64-inch choke. E. M. Jones No. 4-F Ezzell, 1,610 feet, abandoned.

McMullen County

Rhodes field: Magnolia Petroleum Co. No. 1 Edrington, 3,307 feet, abandoned.

Refugio County

Tomoconnor field: L. A. Nordan No. 19-B O'Connor, 5,932 feet, 628 bbls., ¼-inch choke. L. A. Nordan No. 11-B O'Connor, 5,915 feet, 627 bbls., ¼-inch choke.

Nueces County

Luby field: Seaboard Oil Co. No. 5 Luby, 5,082 feet, perforated casing 5,065-75 feet, 130 bbls., ½-inch choke. Seaboard Oil Corp. No. 5 Schaefer, 5,078 feet, 151 bbls., ½-inch choke. Saxet field: Maryland Corp. No. 1 Blucher, 6,197 feet, abandoned. Stratton field: Camp Production

(Continued on Page 74)

BAROID

PRODUCTS FOR Mud Control

—so quickly and conveniently obtained from

BRIDGEPORT

The services of the manufacturer's drilling mud engineers are available to Bridgeport customers when needed, free of cost or obligation.

OUR BAROID PRODUCTS

BAROID — Extra-heavy Colloidal Drilling Mud • AQUAGEL — Trouble-Proof Colloidal Drilling Mud • STABILITE — An Improved Chemical Mud Thinner • BAROCO — An Economical, Salt Water-Resisting Drilling Clay • FIBROTEX—For Preventing or Regaining Lost Circulation in Drilling Wells.

★ One or more of our 50 Drilling Mud stocks is near your drilling location. When you need Baroid Products in a hurry, telephone our nearest representative. He'll see that what you need reaches your location when you need it. . . Where large quantities of Baroid Products are needed, and requirements can be anticipated, take advantage of our money saving carload service—call for direct shipment from the mill to your nearest rail point.

BRIDGEPORT

The BRIDGEPORT MACHINE COMPANY
Factory and General Offices, Wichita, Kansas

HOUSTON
2317 Quitman St.

DALLAS
1401 Magnolia Bldg.

SAN ANTONIO
1909 Alamo Nat'l Bldg.

CORPUS CHRISTI
912 Port Ave.

SHREVEPORT
311 Ricou-Brewster Bldg.

ODESSA
402 2nd St.

TULSA
915 Philtower Bldg.

OKLAHOMA CITY
501 S. E. 29th St.

AND BRANCH STORES

WICHITA
600 East 35th St.

Michigan Field Report

By
O. C. PRESSPRICH

Edenville Second Test Due to Show Results This Week

SAGINAW, Mich., Mar. 21.—New tests in Michigan petroleum fields continued to lag the past week, due to spring transportation difficulties, while interest again ran high in the Edenville area of Midland County as Mammoth Producing & Refining Co.'s confirmation test of the present one-well pool neared the Dundee casing point. The Mammoth test—a west offset to Chapman's discovery well, which stirred Michigan oil interests—was reported drilling below 3,200 feet at the week-end, and was expected to reach the point of definitely confirming or disproving the area as prolific territory. The Mammoth test is No. 1 Ricket, NE SE NW section 27-16n-1w, the first in the immediate vicinity of the discovery well. Operators seem more confident of a favorable showing at the Mammoth test, in view of the highly favorable production of the Chapman discovery well, than in any exploration in Michigan in months.

Meanwhile other drilling activity in the Edenville sector of Midland County continued brisk as drill bits pounded toward the Dundee limestone. Three locations to the north of the Chapman discovery, Smith Petroleum Co. was below 1,600 feet in its No. 1 Snyder, SW SW SE section 22-16n-1w, with structural indications favorable. Mammoth Producing & Refining Co. also had two other tests in the immediate offset vicinity of the discovery well en route to the Dundee. The No. 1 Higgins, SW NW NE section 27-16n-1w, north offset of the discovery well, was reported drilling ahead of 1,600 feet, and the No. 2 Higgins was driving pipe at 150 feet. While north tests from the discovery well were well under way to probe the possibilities of the area, exploration to the south and west also was hastening toward pay sands. Two locations to the south of the Chapman producer, Sun Oil Co. No. 1-B Edenville was reported drilling at 750 feet, and the same company's No. 1-A State-Jerome was running 8-inch casing at 1,000 feet. Another Sun project, 1½ miles to the south of the lone producer, was drilling below 1,700 feet. Western development was being watched at J. V. Wicklund Development Co. No. 3 Land Royalty, 4 miles west of the Edenville play, which was drilling near 3,000 feet in section 24, of Warren Township (16n-2w). This test, if favorable, indicates extension of the Edenville play into surrounding townships. Two other Edenville tests—M. L. Jorgensen No. 1 Gamble in section 25, and Gordon Oil Co. No. 1 Verity in section 26—were reported drilling at around 1,000 feet.

Gladwin County—Buckeye Township

The South Buckeye (Oard) pool added five wells to production, but the North Buckeye (Wicklund) pool failed to log a producer, although several were reported near the Dundee limestone or entering it. The South Buckeye tests were in proved territory. One acidized test, Kales-Graves Co. No. 3 Wooding, NE SE SE section 23-18n-1w, added another producer to the so-called midway area of the pool, joined to the south (Oard) pool proper by a string of producers since Hanners Development Co. brought in the discovery well last summer in section 23. The latest Kales-Graves test showed a gauge of 500 bbls. after acid. Robert L. Tope No. 5 Buehler, NE SW NE section 26-18n-1w, was another 500-bbl. producer after acid. In section 25, where Michigan oil history was made in July, 1936, with the discovery of oil at Beaver Trust No. 1 Oard, which six months later brought development of the north (Wicklund) pool, varied degrees of success attend the bringing in of each new producer. This was illustrated by W. H. Thouriby No. 2 Phillips, SW NE NW section 25-18n-1w, which came in the past week at 80 bbls. a day after acid treatment. Hardly a test in section 25 has rivaled its nearest neighbors in production, and as a whole the section has failed to hold up production in comparison with others nearby.

In marked contrast, in section 11 of North Buckeye, the discovery sector of that pool, practically all producers have been heavy and held up well under continued production.

Two small natural producers were added to the south pool last week. They were M. L. Jorgensen No. 3 Foster, NW NE NW section 26-18n-1w, which developed a 75-bbl. producer, scheduled for acid treatment, and T. F. Caldwell No. 1 Hostetler, SE SE NE section 27-18n-1w, an estimated 50-bbl. daily producer. This test is in the west extension area of the south pool and promises further exploration of section 27. It is scheduled for acid treatment.

Gladwin County—Bentley Township

Bentley Township, Gladwin County, recorded four new oil wells. Stork Oil Co. No. 2 Smart, NW NW NE section 29-17n-2e, led with 200 bbls. daily after acid treatment. To the north of the Stork test, Mammoth Producing & Refining Co. No. 1 Lake, SE SW SE section 20-17n-2e, developed 100 bbls. daily after acid. J. V. Wicklund Development Co. was testing No. 4 Wright, NW NE NE section 28-17n-2e, which was reported with oil in the hole. Gordon Oil Co. No. 1-E State, NW NW NW section 28-17n-2e, reported favorable indications, and was expected to strike pay sands momentarily. Bentley Oil Co. No. 4-A State, SW SE NE section 20-17n-2e, gauged 175 bbls. daily after it was acidized, while Fortney Oil Co. No. 1 Trine, NW SW NW section 16-17n-2e, ran into water, believed to be from the Marshall sand, which flooded the Dundee. Attempts were being made to cement off the flow and proceed with drilling. This test is north and east of general play in the district.

Allegan County

Confirmation of Allegan County's possible new pool, discovered at Sim B. Hood No. 1 Wright wildcat, NE SW SW section 9-3n-13w, Monterey Township, has been delayed by lack of storage facilities and a pipe line outlet. The test has been pinched in considerably since it shot oil over the derrick in its initial flow, which was followed by a fire that destroyed equipment. No gauges have been taken, due to insufficient storage, although in several short flows the test has gone as high as 100 bbls. hourly. Operators estimate, however, that the well will do 500 bbls. daily on completion. Heavier equipment was installed after the fire, casing has been run and the hole has been deepened slightly. Operators are watching the wildcat closely, and considerable activity has been reported in the district. Plans are under way to drill several offsets to determine the territory prospects.

Isabella County

Eastern Broomfield Township, Isabella County, as an area of possible production, was given a setback last week when two wildcat tests were pronounced failures. Pure Oil Co. No. 1 Cook, C S half SW NE section 11-14n-6w, will be abandoned after striking water at 3,671 feet, while J. Golden Zabel No. 1 Kennedy estate, NW NW NE section 25-14n-4w, drilled into water at 3,818 feet. The latter test was 2 miles southeast of Mount Pleasant.

Pure Oil Co. No. 2 Doyle, SW NE SE section 32-15n-6w, was acidized to an estimated production of 400 bbls. daily, adding another favorable producer to Pure's extensive holdings in the area.

Gulf Oil Co. deep test in Grant Township (17n-4w), Clare County, is using a rotary drill through the Marshall formation, with corings being made through the gas sand to furnish future gas formation reference in the area. The test, No. 1 Doherty, SW SW SW section 25-17n-4w, was reported below 1,200 feet, en route to the Dundee to test the area for oil. It was Gulf's first Grant Township test, a south offset, that unexpectedly tapped a 14,000,000-foot gas flow in the Michigan stray, which led to a heavy play of the area as a prospective gas field.

Montcalm County

Daily Crude Oil Co. No. 2 Weatherby, NE NW SE section 20-12n-9w, Winfield Township, was due to strike Dundee limestone this week in a confirmation test of the lone producer in the area. No. 2 is three locations to the northeast of the only producer, and was below the 3,000-foot level Friday. Failures offset No. 1 Weatherby to the west and south causing Daily Crude Oil Co. to shift its tests further away. Tests a mile to the east and more than a mile to the southeast logged oil shows, but did not rate commercial production. Rex Oil & Gas Co. logged a failure at its No. 1 Higgins, SW NW NW section 13-9n-8w, at 3,142 feet.

Bay County

Another Bay County oil test apparently is headed for failure. It is C. W. Teater No. 1 Goodman, SE SW SW section 28-18n-3e, Gibson Township, which was approximately 195 feet in the Dundee with no oil showing reported. The Dundee limestone was topped at 2,959 feet and hopes of a pay zone appeared scant.

Three new and promising oil territories in Michigan drew the long end of the play in the week's list of drilling permits issued by the State Conservation Department. Three of the week's 14 permits went to Bentley Township, Gladwin County, fast coming to the front with each week adding to proved area and production. Two went to Edenville Township, Midland County, scene of the discovery January 30 of what promises to be one of the state's best oil pools, and two to Monterey Township, Allegan County, where operators are flocking since a strike late in February.

The State Conservation Department has set April 1 as the date for its auction of mineral leases on approximately 10,000 acres of state-owned lands in Allegan, Arenac, Clare, Midland, Ogemaw and Saginaw counties. Included in the Clare County acreage are 460 acres in Houghton Lake State Forest, while the Midland County offering includes nearly 8,000 acres in five townships adjacent to Edenville, scene of Central Michigan's latest oil discovery.

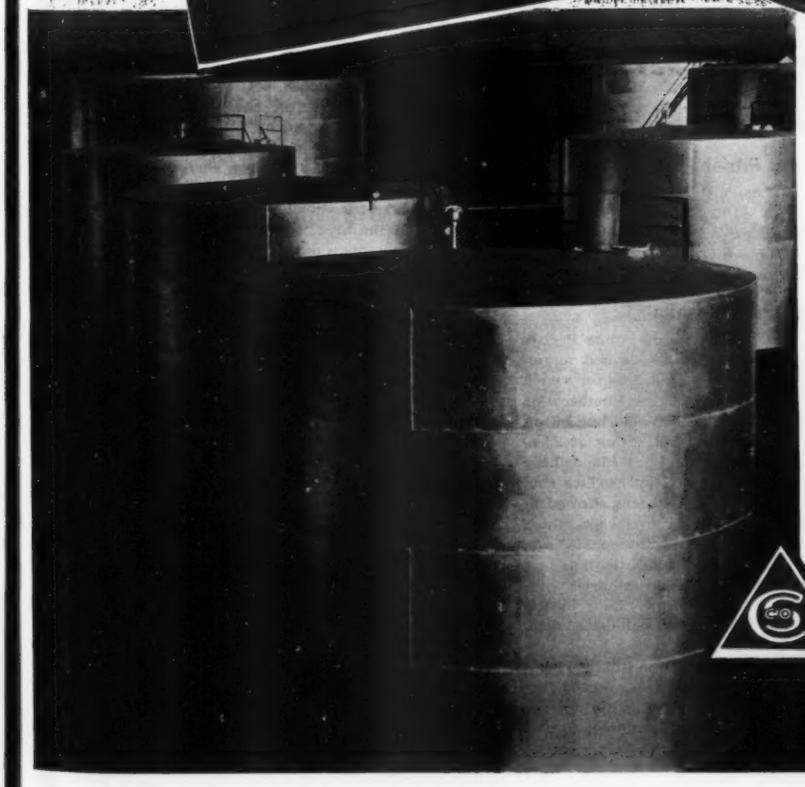
The State Conservation Department has reduced from $25 to $5 the fee it charges for assignment of oil leases. Oil and gas producers had contended the fee for assigning leases on state-owned lands was too high.

Oil royalties collected in 1937 by the state of Michigan, which has many thousands of acres under lease, with 122 of its wells producing, totaled approximately $700,000. Added to this is 40 per cent of the 2 per cent severance tax it collects on every barrel of oil and every cubic foot of gas produced in the state.

Michigan Public Utilities Commission last week denied the application of the Washtenaw Gas Co., Ann Arbor, for authority to build a pipe line to bring Texas natural gas to the city of Ann Arbor for fuel purposes. The commission, however, did not dismiss the application.

The commission's action was taken after the Michigan Independent Gas Production Association, composed of small producers who have no market outlet for their gas, had bombarded the commission with testimony to the effect that Michigan's potential gas reserves are sufficient to supply the entire state.

The same association, with the utilities commission as intervenor, is plaintiff in a Mecosta County court action seeking to set aside contracts under which gas from the Six Lakes and Broomfield areas is taken by Consumers Power Co. for distribution in Saginaw, Bay City, Midland, Lansing and numerous smaller communities.



Spring is here again—brighten up time in the oil country. For property protection and new pride in ownership, there's nothing to match a generous use of CSCO Paint.

Made from special formulas to meet the varying climatic conditions of oil field operations, CSCO paints are available for any specific oil field use.

Add new lustre to your properties from the complete stocks of CSCO paints to be found at all Continental stores.

THE CONTINENTAL SUPPLY COMPANY

General Offices: DALLAS, TEXAS

Export Office: CONTINENTAL EMSCO CO., Inc.

30 Rockefeller Plaza New York City, N. Y.

Representatives:

LONDON MARACAIBO TRINIDAD BUENOS AIRES TAMPICO

SERVING THE OIL AND GAS INDUSTRIES

CONTINENTAL

North Louisiana, Arkansas

By GEORGE WEBER

Important Tests Act Badly After Good Initial Showing

SHREVEPORT, La., Mar. 21.—Results in this area's two outstanding current discoveries were generally disappointing in the past week. Although the expected completion of the new Magnolia, Arkansas and Zwolle, Louisiana discoveries were forestalled by mechanical and unexplained causes, the general opinion is that they will be ultimately successful.

Three additional tests came into prominence. In southern Arkansas, the Buckner field has an indicated extension, its first well since discovery several months ago. To the southeast, and in the vicinity of the Kerr-Lynn wildcat, another test found saturation in upper sands, which gave encouragement for the hopes of striking pay in the Big lime. The third development of interest is the coring of gas and distillate sand in a deep test being drilled in the old Shongaloo gas field of Webster Parish, Louisiana.

Despite a sharp gain in completions in the area, new locations staked for field and wildcat drilling exceeded new wells, pointing to augmented activity.

Rodessa, Texas, Completions

The number of new wells added to the Texas side of Rodessa jumped sharply, with nine new oil wells in that most active section of the tristate field.

Bay Oil Co. No. 5 Cobb, G. Crowder Survey, Cass County, made 282 bbls. per day on a quarter-inch choke, with tubing pressure of 200 pounds and casing pressure of 1,350 pounds, total depth 6,119 feet.

Magnolia Petroleum Co. completed No. 12 Rives, in the Collum Survey, Cass County, for 401 bbls. per day through a quarter-inch choke, tubing pressure 350 pounds, casing pressure 600 pounds, total depth 6,047 feet.

George Barham No. 1 Beard, in the Bennington Survey, Jefferson area, Marion County, gauged 17 bbls. per hour through a quarter-inch choke, with tubing pressure 500 pounds, and casing pressure 750 pounds. Total depth is 6,021 feet.

George Echols No. 1 Whitfield, Bennington Survey, made 20 bbls. per hour through a quarter-inch choke, with tubing pressure 400 pounds and total depth of 6,106 feet.

Flesh & Hootkins No. 1 Whitfield, Bennington Survey, made 16 bbls. per day through a quarter-inch choke, with tubing pressure 625 pounds, casing pressure 250 pounds, total depth 6,065 feet.

Gulf Oil Corp. brought in No. 3-A Henderson, in the Bennington Survey, for 481 bbls. per day on a quarter-inch choke, tubing pressure 1,350 pounds and casing pressure of 2,000 pounds. Total depth is 6,036 feet.

Midway between the Jefferson and Lodi fields, another producer was added as Gulf Oil Corp. brought in No. 1-A Ray, Hanks Survey, for an initial gauge of 20 bbls. per hour through a quarter-inch choke. Tubing pressure was 375 pounds and casing pressure 1,125 pounds. The total depth is 6,081 feet.

On the north edge of the Marion County section, Hollandsworth Drilling Co. completed No. 2 Hill, Smith Survey, for 25 bbls. per hour through a quarter-inch choke, tubing pressure 200 pounds, casing pressure 500 pounds and total depth 6,010 feet.

Phillips Petroleum Co. added No. 1 Denton, Coy Survey, making 18 bbls. per hour through a quarter-inch choke, tubing pressure of 350 pounds, casing pressure 600 pounds and total depth 6,183 feet.

Arkansas Rodessa

The Miller County sector of Rodessa gained three producers. Gulf Oil Corp. No. 1 Hanner, section 16-20-24, gauged 292 bbls. per day through a 35/64-inch choke. Total depth is 6,020 feet.

W. M. Layton No. 1 McKellar, in the north end of the field, section 15-20-28, made 250 bbls. per day through a three-fourths inch choke, with tubing pressure 100 pounds and casing pressure 475 pounds, total depth 6,062 feet.

R. W. Newell No. 1 Thomas, section 12-20-28, total depth 6,144 feet, is heading 25 bbls. per day through open tubing.

Estimated Daily Production

Estimated daily gross production all companies week ending March 18, 1938:

NORTH LOUISIANA	
Bellevue	720
Caddo light	3,900
Caddo heavy	2,500
Converse	570
Cotton Valley heavy	110
Cotton Valley light	*5,600
De Soto and Red River	1,385
Elm Grove	290
Haynesville	2,935
Holly	85
Homer	2,565
Lisbon	10,670
Pleasant Hill	110
Rodessa	41,900
Sarepta-Carterville	200
Sligo	715
Sugar Creek	330
Urania	2,725
Zwolle	860
Total	78,170

SOUTH ARKANSAS	
Buckner	200
Champagnolle	1,185
El Dorado	1,855
Lisbon	270
Miller County	400
Nevada	675
Rodessa	8,235
Shuler	15,490
Smackover light	2,010
Smackover heavy	15,785
Stephens	560
Troy	1,275
Urbana	1,190
Total	49,130

Texas side of Rodessa field 36,745 bbls. daily.

*3,700 bbls. is distillate.

Cass County Wildcat

The Vincent Hughes No. 1 Lyster, in the Bateman Survey, Cass County, Texas, is awaiting orders after showing salt water in the Woodbine sand at 3,960 feet.

Caddo Parish Test

In Caddo Parish, Louisiana, Olson Drilling Co. No. 1 Sharp, a wildcat in section 10-18-16, has sand reported at 6,021-27 feet. Information is being withheld on the test, but later reports show the wildcat drilling below 6,100 feet with casing moved to the site.

Blue Lake Results

In the Blue Lake or Zwolle area of Sabine Parish, the indications were bright at the week's end for an early completion of the new deep sand discovery well. The Sutton-Zwolle Oil Co. No. 1 Sabine Lumber Co., following the recovery of 1,200 feet of pipe line oil on a drill stem test several days ago, set casing at 3,846 feet with bottom of the hole at 3,865 feet. While drilling out plug, the well tried to blow out, and surface connections were rapidly set up. The well was allowed to clean itself and then was shut in to await storage, which was being moved to the site. When operators again tried to bring the well in, it had gone dead, and the hole was deepened 1 foot. Considerable swabbing followed without successfully making the well flow. Late in the week, the well was treated with 3,000 gallons of acid, which went in under a vacuum.

Latest report from the well is that the fluid is rising in the hole. Operators had swabbed down to 2,800 feet and the level had risen to within 800 feet of the surface. The hole is reported full of live oil, although it was washed with oil before acidizing. Indications are that the test will make a producer, although it is still too early to make definite statements.

Lisbon Wells

In the Claiborne Parish section of Lisbon three new producers were brought in during the week. Gulf Oil Corp. No. 1 McDonald, section 2-20-5, flowed 1,206 bbls. per day on a 20/64-inch choke after acidizing with 5,000 gallons. Total depth is 5,219 feet.

Scout Oil Corp. No. 2 Bean, section 32-21-4, gauged 41 bbls. per hour through 42/64-inch choke with tubing pressure of 125 pounds and total depth of 5,179 feet.

Texas Canadian Oil Co. No. 1 Tanner, section 32-21-4, made 58 bbls. per hour through a half-inch choke, tubing pressure 250 pounds and casing pressure 400 pounds. Total depth 5,289 feet.

In the Lincoln Parish side of the field one well was brought in. Compton & Hart No. 1 Patton Estate, section 7-20-4, made 8 bbls. per hour through a 13/64-inch choke, with 275 pounds pressure on the tubing set on a packer. Total depth is 5,307 feet.

Holloway Producer

The sixth Holloway sand producer in the Cotton Valley field of Webster Parish was A. G. Oliphant No. 1 Central Investment Co., section 33-21-10, which gauged 1,057 bbls. per day through a half-inch choke. Tubing pressure is 375 pounds and casing pressure 1,200 pounds. Total depth of the test is 5,905 feet and the Holloway sand was cored at 5,862-91 feet.

In the same field, Oliphant's No. 1 Stewart, two locations southwest of the present edge of Holloway sand production, is coring below 5,900 feet, after showing no sand in that horizon, apparently delimiting the sand on the southwest.

Shongaloo Deep Test

In Webster Parish, the Magnolia Petroleum Co. No. 1 Sexton Unit, section 32-23-9, had its first showing. The test has been drilling in the old gas field for several weeks, but showed salt water or hard tight sand in all upper horizons producing in the district. The Bodcaw sand cored at 8,033-61 feet had no show, but sand at 8,299-3,800 feet and again at 8,302-07 feet had a good gas odor and a show of distillate. The sand body is believed to be at 8,293-8,310 feet, corresponding roughly to the 8,500-foot sand at Cotton Valley.

The deep test is showing up higher than other similar wells in the area, being reported nearly 200 feet higher than some Cotton Valley wells. The Lower Marine was topped at 7,605 feet. Operators are coring ahead to the contract depth of 8,500 feet and may later plug back to test the 8,300-foot sand.

South Arkansas Developments

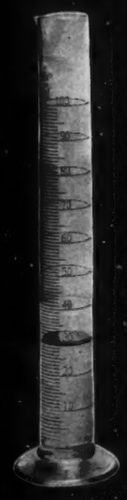
Southern Arkansas continued to hold the center of attention during the week, with important developments unfolding in several points. Most outstanding is the Kerr-Lynn Oil Co. No. 1 Barnett, section 14-17-20, a wildcat due east of Magnolia in Columbia County.

The test created considerable interest two weeks ago when it turned from an apparent failure to a surprise gusher, but since that date, disappointments have again set in. After flowing the well for a short time when it originally came in, operators killed it to repair a surface connection. The well was reopened on Sunday, March 12, flowing approximately 46 bbls. of oil during the first hour through a half-inch choke and 38 bbls. during the next 45 minutes through open 2½-inch flow line. The well then went dead.

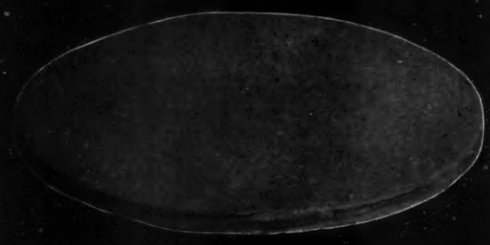
It was closed in for two hours, then opened through a 2-inch choke. It blew a small amount of gas, flowed oil for 4 or 5 minutes and again ceased. On the follow-

(Continued on Page 74)

BAROID-AQUAGEL MUDS BUILD *thin* FILTER CAKES ON THE WALLS OF THE HOLE!



Actual size filter cake (1/8") made from 10.6 lbs. per gal. (80 lbs. per cu. ft.) BAROID-AQUAGEL mud in Wall-Building Tester at 100 lbs. per sq. inch in 3 hours. Water loss, 29 cc. as shown in graduate.



Actual size filter cake (7/8") made from 10.6 lbs. per gal. (80 lbs. per cu. foot) California native mud in Wall-Building Tester at 100 lbs. per sq. inch in 3 hours. Water loss, 151 cc. as shown in graduates.

Thin filter cakes are desirable because they minimize the danger of sticking tools when going in or coming out of the hole.

The thickness of filter cakes is also important because it is a direct indication of the over-all quality of the mud — indicating sand content, colloidal content, gel-strength, percentage of solids, and water loss to the formation.

The results of laboratory tests, shown at right, indicate that BAROID-AQUAGEL muds build *thinner, more impervious* filter cakes than other muds of the same weight.

See Our Exhibit
INTERNATIONAL PETROLEUM EXPOSITION
TULSA
MAY 14-21

A COMPLETE DRILLING MUD SERVICE

Baroid—Extra-Heavy Drilling Mud. **Aquagel**—Trouble-Proof Colloidal Drilling Mud. **Stabilite**—An Improved Chemical Mud Thinner. **Baroco**—An Economical, Salt-Water Resisting Drilling Clay. **Fibretex**—For Preventing or Regaining Lost Circulation in Drilling Wells.

Stocks Carried and Service Engineers Available in All Active Oil Fields.

BAROID SALES DEPARTMENT

NATIONAL PIGMENTS & CHEMICAL DIVISION OF
NATIONAL LEAD COMPANY
BAROID SALES OFFICES • LOS ANGELES • TULSA • HOUSTON

January Bureau Report Shows Decline in Fuel Demands

The substantial decline in demand for fuel oil is responsible for a decrease in demand for all oils in January compared with January 1937. The indicated demand for all oils in January was 103,414,000 bbls., a decrease of 0.6 per cent, according to the Bureau of Mines report covering producing and refinery operations.

The government report shows that the January demand for fuel products classed as gas oil and distillate fuels was 2,125,000 bbls., or 12.4 per cent less than the same month of last year. This is believed to be largely accounted for by the higher

United States Supply and Demand—Crude Oil (Bbls.)

	Total supply	Total demand	Excess Demand	Excess Pct.	Domestic production	Imports	Indicated domestic demand‡	Exports	Stocks refinable crude Jan. 31
1938, January	108,102,000	107,497,000	†605,000	† 5	106,007,000	2,095,000	101,544,000	5,953,000	306,689,000
Daily average	3,487,000	3,467,000	20,000	....	3,420,000	68,000	3,275,000	192,000	.....
1937, January	99,696,000	101,121,000	1,425,000	1.4	98,567,000	1,129,000	97,525,000	3,596,000	286,759,000
Daily average	3,216,000	3,262,000	46,000	....	3,180,000	36,000	3,146,000	116,000	.....
Increase, 1938	8,406,000	6,376,000	.....	....	7,440,000	966,000	4,019,000	2,357,000	19,930,000
	8.4%	6.3%	.....	....	7 5%	8.6%	4.1%	65.6%	7.0%

Supply and Demand—Refinery Products—Motor Fuels (Bbls.)

	Total supply	Total demand	Excess Demand	Excess Pct.	Domestic production	Imports	Domestic demand	Exports	Stocks Jan. 31§
1938, January	47,681,000	38,266,000	*9,415,000	*2 5	47,681,000	.....	35,176,000	3,090,000	90,824,000
Daily average	1,538,000	1,234,000	304,000	....	1,538,000	.....	1,135,000	100,000	.....
1937, January	44,681,000	36,674,000	*8,007,000	*21.8	44,681,000	.....	33,696,000	2,978,000	75,448,000
Daily average	1,428,000	1,183,000	245,000	....	1,441,000	.....	1,087,000	96,000	.....
Increase, 1938	3,000,000	1,592,000	.....	....	3,000,000	.....	1,480,000	112,000	15,376,000
	6.7%	4.3%	.....	....	6.7%	.....	4 4%	3 8%	20 4%
Kerosene									
1938, January	5,638,000	6,198,000	560,000	9 9	5,638,000	.....	5,360,000	838,000	6,523,000
1937, January	5,923,000	5,934,000	*11,000	.2	5,923,000	.....	5,297,000	637,000	5,622,000
Increase, 1938	†285,000	264,000	.....	....	†285,000	.....	63,000	201,000	901,000
	†4.1%	4.4%	.....	....	†4.1%	.....	1 2%	31.6%	16.0%
Gas Oil, Distillate Fuels and Residual Fuel Oil¶									
1938, January	43,304,000	40,912,000	*2,392,000	*5 8	41,630,000	1,674,000	37,786,000	3,126,000	119,977,000
1937, January	41,890,000	46,544,000	4,654,000	11.1	40,423,000	1,467,000	42,975,000	3,569,000	102,364,000
Increase, 1938	1,414,000	†5,632,000	.....	....	1,207,000	207,000	†5,189,000	†443,000	17,613,000
	3.4%	†12.1%	.....	....	3.0%	14.1%	†12 1%	†12.4%	17 2%
Gas Oil and Distillate Fuels									
1938, January	13,876,000	14,899,000	1,023,000	7.3	13,876,000	.....	12,642,000	2,257,000	21,543,000
1937, January	13,393,000	17,024,000	3,631,000	26 9	13,319,000	74,000	14,856,000	2,168,000	19,088,000
Increase, 1938	483,000	†2,125,000	.....	....	557,000	†74,000	†2,214,000	89,000	2,455,000
	3.6%	†12.4%	.....	....	4.2%	.....	†14.9%	4.1%	12.9%
Residual Fuel Oils									
1938, January	29,428,000	26,013,000	*3,415,000	*11.6	27,754,000	1,674,000	25,144,000	869,000	98,434,000
1937, January	28,497,000	29,529,000	1,023,000	2.7	27,104,000	1,393,000	28,119,000	1,401,000	83,276,000
Increase, 1938	931,000	†3,507,000	.....	....	650,000	281,000	†2,975,000	†532,000	15,158,000
	3.3%	†12.0%	.....	....	2 4%	20.2%	†10.5%	†38.0%	18.2%
Lubricating Oils									
1938, January	2,785,000	2,291,000	*494,000	*21.5	2,785,000	.....	1,471,000	820,000	8,006,000
1937, January	2,649,000	2,343,000	*306,000	*13.1	2,649,000	.....	1,683,000	660,000	6,788,000
Increase, 1938	36,000	†52,000	.....	....	36,000	.....	†212,000	160,000	1,218,000
	1.4%	†2.2%	.....	....	1 4%	.....	†12 6%	24 2%	17 9%
Petroleum Wax (Lbs.)									
1938, January	44,536,000	43,899,000	*637,000	*14 5	41,720,000	2,816,000	32,148,000	11,751,000	145,629,000
1937, January	43,814,000	46,958,000	3,144,000	7 1	41,720,000	2,094,000	29,160,000	17,798,000	107,490,000
Increase, 1938	722,000	†3,059,000	.....	....	.....	722,000	2,988,000	†6,047,000	38,139,000
	1.6%	†6.5%	.....	....	.....	34.5%	10.2%	†34.0%	35.5%

*Excess supply. †Decrease. ‡Crude oil only. §Includes finished and unfinished refinery gasoline and natural gasolines. ¶Gas oil and fuel oil equals gas oil and distillate fuels plus residual fuel oils. Note: Total supply equals domestic production plus imports. Total demand equals domestic demand plus exports. Data on demand for refined products are based on refinery shipments.

Crude Oil Runs to Stills and Total All Oils (Bbls.)

	Total imports§	Total exports§	Total crude to stills	Per cent yield gasoline‡	Nat. gasoline production	Total supply all oils*	Total demand all oils*	Stocks all oils Jan. 31
1938, January	4,217,000	13,941,000	97,900,000	47 7	4,336,000	114,707,000	103,414,000	575,279,000
Daily average	136,000	450,000	3,158,000	....	140,000	3,700,000	3,336,000	.....
1937, January	2,988,000	11,531,000	94,179,000	46.3	3,732,000	105,534,000	104,049,000	520,131,000
Daily average	96,000	372,000	3,038,000	....	120,000	3,404,000	3,356,000	.....
Increase, 1938	1,229,000	2,410,000	3,721,000	....	604,000	9,173,000	†635,000	55,148,000
	41.1%	20.9%	4.0%	....	16.2%	8.7%	†0.6%	10.6%

*Total all oils includes crude and refined products, natural gasoline and benzol. †Decrease. ‡Includes natural gasoline blended at refineries. §Includes crude oil and refinery products. In case of imports includes receipts in bond and for domestic use. All data based on Bureau of Mines reports.

KELLOGG-BUILT RETURN HEADERS Lengthen Furnace Runs

Kellogg Return Headers are designed so as to successfully resist extremely high temperatures and pressures as well as sudden and excessive thermal variation shocks.

Their scientifically correct, but simple, design gives them unusual strength and assures absolutely tight and leak-proof plugs even under the most severe operating conditions. The plugs are removable with remarkable ease and speed —thus reducing furnace "down time" and labor costs.

Kellogg Return Headers resist corrosive liquids and gases better and are longer lived than ordinary headers. They can be supplied in all standard sizes in two-hole, box-elbow, or multiple-hole type in weldable alloy metals to meet specific operating conditions.

THE M. W. KELLOGG COMPANY · JERSEY CITY, NEW JERSEY · 225 BROADWAY, NEW YORK

REPRESENTATIVES

Los Angeles: 1031 South Broadway — Houston, Texas
Chicago: 122 South Michigan Avenue — Tulsa: Philtower Building

KELLOGG

"Masterweld" pressure vessels for the Power, Refinery and Chemical Industries. Power Plant and Industrial piping. Heat Exchangers, Radial Brick Chimneys, Plastic Refractories. Cross, Holmes-Manley, de Florez and Tube and Tank cracking units. Gas Polymerization Units. Deasphalting, Dewaxing, Solvent Extraction, Acid Treating Plants, Absorption Plants and Pipe Stills.

temperatures which reduced the demand for furnace oils and U.G.I. gas oils.

The decline in the demand for residual fuel oils was 3,507,000 bbls., or 12 per cent. This reflects general business conditions which has reduced the consumption of heavy fuels by industries, railroads and power plants.

The increase of 4.3 per cent in the demand for motor fuels as shown in the table was in line with expectation and partially offsets the decreases in fuel oil consumption. Kerosene consumption also ran ahead of January 1937, with a small decline in lubricating oil requirements. The domestic demand for wax gained, but this increase was more than offset with a decline of 34 per cent in export shipments.

Without exception the stocks of refinery products listed in the table were greater on January 31 than the year previous. Crude oil inventories were 19,930,000 bbls., or 7 per cent greater. The increase in stocks of all oils was 55,148,000 bbls., or 10.6 per cent.

Southwest Texas Fields

(Continued from Page 66)

Co. No. 2-A Wardner, 6,298 feet, 128 bbls., 11/32-inch choke. West Saxet field: Renwar Oil Corp. No. 1 Morgan, 5,860 feet, abandoned.

San Patricio County

Taft field: Humble Oil & Refining Co. No. 34 Mayo, 4,923 feet, perforated casing 4,918-22 feet, 8 bbls., per hour, 3/16-inch choke.

Victoria-Calhoun Counties

Heyser field: Blanco-Buchannan No. 8 Dunwoody, 5,499 feet, perforated casing 5,488-97 feet, 283 bbls., 3/16-inch choke. Gulf Oil Corp. No. 3-B Taylor, 6,066 feet, perforated casing 5,486-91 feet, 140 bbls., 7/64-inch choke. Heyser field: Sun Oil Co. No. 7 W. N. Coffey, 5,756 feet, 30 bbls. oil, 5 bbls. salt water, 9/64-inch choke. McFaddin field: Transwestern Oil Co. No. 3-C McFaddin, 4,402½ feet, 44 bbls., 3/32-inch choke. Transwestern Oil Co. No. 2-E McFaddin, 4,413 feet, 81 bbls., ⅛-inch choke.

Webb County

Killam field: Bridwell Oil Co. No. 1 Bland, 2,072 feet, abandoned. Bridwell Oil Co. No. 1 Garcia, 2,005½ feet, 6 bbls., pumping. Oilton field: M. E. Brooks No. 2 Laurel Brothers, 2,024 feet, perforated casing 1,991-97 feet, 150 bbls., pumping. Cox & Wise No. 1 Wise, 1,997 feet, 50 bbls., ½-inch choke. Daubert & Lipscomb No. 2-A Garcia, 2,023 feet, 8 bbls. per hour. R. W. Davis No. 2 Moreno, 1,924 feet, abandoned. Killam & McCampbell No. 4 Thompson, 2,050 feet, perforated casing 1,936-45 feet, 9 bbls. oil, 10 per cent salt water, pumping. Mountain Townsite Oil Co. No. 4 fee, 1,887 feet, oil sand 1,880-87 feet, 50 bbls. pumping. Texola Drilling Co. No. 1 Martin, 1,915 feet, oil sand 1,899-1,915 feet, 200 bbls., pumping.

Zapata County

Mirando Valley field: Bert Calvin No. 1 Lopez, oil sand 1,873-81 feet, 193 bbls., flowing and pumping.

La.-Ark. Fields

(Continued from Page 70)

ing day bailer was run to 6,000 feet and sulfur water with some salt water was recovered.

Operators then ran tubing to bottom and set a packer disk. Fluid in the hole at 500 feet from surface hampered operations, and latest reports showed black sulfur water being swabbed the fourteenth time down to 1,500 feet. A series of mechanical difficulties has beset the operators since early in the well's drilling history, and the consequent poor condition of the hole is blamed for the breaking in of the sulfur water.

In case the bailing fails to bring in oil, operators are left with alternatives of squeezing or whipstocking and redrilling the section. Intense interest in the area continues, despite the lack of immediate success at the Kerr-Lynn well.

Mechanical difficulties are also hampering operations in the Buckner field, in northwestern Columbia County. There the Standard Oil Co. of Louisiana has two outpost tests; one in the sand with the casing stuck, and the second with drill pipe stuck just above the producing formation.

No. 1 Crone, one-half mile outpost to the northeast topped the Big lime at 7,264 feet and showed porosity and saturation to the total depth of 7,272 feet. A drill stem test at 7,225-72 feet showed recovery of 600 feet of oil and 60 feet of oil and mud in 20 minutes using quarter-inch chokes top and bottom. Seven-inch casing was then run, and at latest reports operators were attempting to loosen it by lubricating with oil at 6,970 feet where it stuck.

To the south and east, operations are still being held up on the company's No. 1 Bodcaw-Barbara, section 18-16-22, where drill pipe has been stuck for several days. Eighteen more joints were recovered late in the week, and 31 joints remain to be cut and removed before the test can drill down to the sand. Total depth is 7,226 feet, just below the field sand.

Village Wildcat

In the vicinity of Village, east of the Kerr-Lynn prospect, the Standard Oil Co. of Louisiana encountered encouraging shows when a sand at 4,616-50 feet showed saturation at 4,618-22 feet. A drill stem test at 4,616-50 feet using three-eighths inch chokes top and bottom showed recovery of 105 feet of fluid in 20 minutes. The fluid was mud, cut with oil, and some gas. While the sand itself is of no commercial importance, the finding of an oil showing favors chances of success in the Big lime, which is the center of attention at Buckner, Kerr-Lynn wildcat and to some extent at Shuler.

Gulf Coast Fields

(Continued from Page 58)

2 Marrero Land & Investment Co., section 21-17s-24e, perforated casing at 10,065-95 feet and was completed for an initial production of 1,100 bbls. per day through a quarter-inch choke.

COMPLETIONS ON TEXAS COAST

Brazoria County

Hastings field: C. Andrade No. 1 Blumer, 6,108 feet, perforated casing 6,105-95½ feet, 626 bbls., quarter-inch choke. Manvel field: Sam E. Wilson No. 1 J. M. Campbell, 4,069 feet, 420 bbls., quarter-inch choke. West Columbia field: Mike Hogg No. 1 Varner, 3,390 feet, 258 bbls., 7/32-inch choke.

Chambers County

Anahuac field: Humble Oil & Refining Co. No. 15 Gripon, 7,119 feet, perforated casing 7,114-17 feet, 586 bbls., quarter-inch choke. Humble Oil & Refining Co. No. 2 Shaver, 7,134 feet, perforated casing 7,127-32 feet, 107 bbls., quarter-inch choke.

Fort Bend County

Orchard field: Gulf Oil Corp. No. 53 Moore, 10,085 feet, abandoned.

Galveston County

Dickinson field: Humble Oil & Refining Co. No. 2 R. B. Peters, 8,600 feet, abandoned. Pure Oil Co. No. 2 H. J. Otterside, 8,100 feet, 447 bbls., quarter-inch choke. Hitchcock field: N. W. Hunter No. 2 M. Stewart, 5,337 feet, abandoned.

Harris County

Clinton field: Stanolind Oil & Gas Co. No. 1 Nora Barraco, oil sand 3,810-18 feet, 408 bbls., quarter-inch choke. Fairbanks field: E. L. Smith and Ownby Drilling Co. No. 1 Meyers, 6,856 feet, perforated casing 6,833-52 feet, 57 bbls., 16 hours., one-eighth inch choke. Friendswood field: Humble Oil & Refining Co. No. 1 Jones and Merry, 6,049 feet, 577 bbls., quarter-inch choke; No. 1 B. A. Whitcomb, oil sand 5,750-6,049 feet, 584 bbls., quarter-inch choke. Tomball field: Humble Oil & Refining Co. No. 3 Weindorf, 5,561 feet, perforated casing 5,492-5,517 feet, gas well.

Jefferson County

Amelia field: Humble Oil & Refining Co. No. 1 W. F. Straughn, 6,775 feet, perforated casing 6,767-70 feet, 623 bbls., quarter-inch choke. North Cheek field: Magnolia Petroleum Co. No. 3 Phelan, 9,007 feet, abandoned.

Liberty County

Hardin field: Arkansas Fuel Oil Co. No. 1 W. J. Green, 7,615 feet, 586 bbls., quarter-inch choke. Gulf Oil Corp. No. 1 J. C. Barfield, 7,624 feet, perforated casing 7,611-21 feet, 516 bbls., quarter-inch choke. Jack Frazier No. 1 Buffam-Benning, 7,475 feet, abandoned. L. W. Wickes No. 2 Tullos, 7,620 feet, 625 bbls., quarter-inch choke.

Wharton County

Five Corners field: Texas Co. No. 14-B Pierce Estate, 5,518 feet, 267 bbls., 12/64-inch choke.

"Petroleum Comes of Age" Recalls Pioneer Days of Oil

Many histories of petroleum attempt to cover at least the North American Continent. For a refreshing change, however, the latest one, "Petroleum Comes of Age," confines its text to the petroleum history of the two Oil Creek regions tributary to the Allegheny River—one in New York state and the other in Pennsylvania.

This volume, 228 pages in length, was carefully and ably written by Prof. Albert A. Lawrence, United States Coast Guard Academy, after an exhaustive study of all the source material. The history is complete and reliable, and the 19 pages of references provide adequate opportunity for those who wish to delve deeper into any particular phase.

Every "old-timer" in the oil industry will be interested in "Petroleum Comes of Age," and in many cases will desire a copy so that he may review events and locations in which he was active during the days long past. The author has skillfully shaken off the dust which too often coats happenings long gone, and has injected so many sidelights of human interest that the narrative flows along absorbingly and without boredom. His pleasing style is well demonstrated in the chapter headings, which are:

The Oil Called "A Touronton"; Seneca Oil at Cuba; Surface Indications Before 1850; Slow Progress in Northwestern Pennsylvania; The Drive for Cheaper Illumination; The Seneca Oil Company; "You've Struck Oil, Sir!"; Flowing Wells—Flitting Profits; The First Real Oil Boom; General Movement Into the Hills; The Bradford Era; Production Progress; Changing Techniques in Oil Transport; Pipe Lines and Pipe Dreams; Refinements in Refining; "Base and Common Uses"; The Law and Lawlessness.

Illustrations in this work include photographs of the Seneca Oil Spring at Cuba and of its tablet and monument; portraits of Col. E. L. Drake, Samuel M. Kier, George H. Bissell, Jonathan Watson, William and Theodore Barnsdall, and John D. Rockefeller; a view of the first refinery, and several maps of the territory discussed in the book.

Aside from the personal interest which older oil men will naturally have in this competent record of oildom's cradle days, many oil companies will properly feel that their oil library is incomplete without a copy of "Petroleum Comes of Age" for reference purposes. It gives one a discerning viewpoint on that period which could not be acquired through any other source.

A copy of "Petroleum Comes of Age" may be purchased through the Book Department of The Oil and Gas Journal at the established retail price of $2.25, express prepaid, and it will be forwarded promptly upon receipt of check or money order for that sum. Where payment does not accompany the order the book will be shipped express c.o.d. to avoid delay.

Mosul Oilfields Search for Light Oil Yet Unsuccessful

Search for light oil production on holdings of Mosul Oilfields, Ltd., by its operating subsidiary, British Oil Development Co., Ltd., is proceeding along lines prosecuted in 1937. So far the search for lighter oil has been unsuccessful, according to a report on Iraq activity in 1937 prepared by permission of the Near East Development Corp. for the A.I.M.E. by Ben B. Cox, Socony-Vacuum Oil Co., Inc., geologist. Deeper drilling in the Qaiyarah-Najmah-Jawan-Qasab field developed a small reserve of 17 to 19 degrees A.P.I. black sulfurous oil in the Pilsner (Upper Cretaceous). Ten structures outside the proved field were tested or were under test at the end of 1937. The reserve at Qaiyarah averages 16 degrees A.P.I. with 6 per cent or higher sulfur contamination available in the "continuous limestone" (Lower Miocene, Oligocene, Middle Eocene) and from the Pilsner (Upper Cretaceous). Crude production from Iraq, with the unitized Kirkuk field supplying most of it, totaled 31,171,476 bbls. in 1937, calculated by a conversion factor of 7.6 bbls. per ton.

BREWSTER

TRAVELING BLOCKS

- American Roller Bearings
- 36" Manganese Steel Sheaves
- 450 Ton Capacity.
- Straight Fall.
- Perfectly Balanced.
- No Weave or Wobble
- Safety Guards, rounded edges, counter-sunk Bolts and Pins.

WRITE FOR PRICES

THE BREWSTER CO., INC.
Phone 2-3181 Shreveport, La.
Longview . New Iberia . Corpus Christi
Houma . Lake Charles . Rodessa

WALL ROPE

Complete stocks of Oil Field Cordage carried in Mid-Continent and Gulf Coast Fields

WALL ROPE WORKS, Inc.
Houston, Texas
2000 Nance St. Telep. Cap. 0244

CONTROLLED VERTICAL DRILLING

TOTCO

DRIFT RECORDER

ACCURATE · DEPENDABLE
FAST · SAFE · ECONOMICAL

Limiting the maximum allowable deviation and checking the inclination of the hole at frequent intervals with TOTCO records, increases drilling speed and aids in improved well completion.

TECHNICAL OIL TOOL CORPORATION, LTD.
1311 N. Havenhurst Dr., Los Angeles

TOTCO RENTALS AND SERVICE
Carson Machine and Supply Co.
Houston Oil Field Material Co.
R. D. Wallace, Casper, Wyoming

EXPORT: Lucey Export Corporation

Among Gulf Coast Drilling Contractors

Edwards Drilling Co. completed its No. 1 Robertson, offsetting the discovery well in the East Telferner field, as a gas well, and the rig is being moved over for a second test. The company has rotaries operating in the Dickinson field for the Kenben Oil Co. and Mid-States Oil Co., while another is on location in the Lockridge field, Brazoria County.

Nicklos Drilling Co. is nearing the pay horizon in three wells in the Villa Platte field for the Continental Oil Co.; No. 1 McDaniels is below 8,791 feet, No. 1 Tate is drilling below 8,836 feet and No. 1 Vidrine is drilling below 5,971 feet. In the Valentine field, No. 16 Harang is being completed, No. 17 Harang is drilling ahead, while contract was received for No. 1 Ducas Abribat.

Several completions in widely scattered fields were recorded by Smith & McDannald. In the Bay City field No. 1 Gaines, which was drilled for themselves, flowed 107 bbls. in 24 hours through a 12/64-inch choke. In the same field casing has been cemented on Pan American Production Co. No. 1 Richers and a production test is being made. In Coastal Louisiana, Pan American Production Co. No. 4 Cormier was completed for a good producer and the rig is expected to be moved to another location. One completion was marked up for the Pure Oil Co. on the Otterside lease, while another outfit is drilling on the same company's No. 5 Shelor.

Rowan Drilling Co. is preparing to make production test on two wells in the Venice field, Plaquemines Parish, for the Tide Water Oil Co., while in the Fairbanks field oil sand was logged in Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 1 White, which is expected to extend production about a half mile to the east.

H. J. DeArman has moved one of his rotaries to Fort Bend County, where No. 1 J. C. Spencer, a wildcat test, will be drilled jointly with J. R. Spencer on the H. Boyle lease. The well is located in the Simonton area and is scheduled to be drilled to 7,000 feet.

Housch - Schofield and Thompson have reached a critical depth on Laverne Decker No. 1 Broussard, a wildcat in the Winnie area, Chambers County. In the Hitchcock field, Red Bank Oil Co. No. 1 Stewart Title Guaranty Co. is drilling below 6,100 feet, and has failed to log the discovery sand at 5,300 feet.

Trinity Drillers is making a production test on the wildcat test of H. J. Porter No. 1 J. W. Foust, north of Edna in Jackson County. The hole was drilled to a total depth of 5,170 feet and the test is being made through perforated casing just below 2,600 feet.

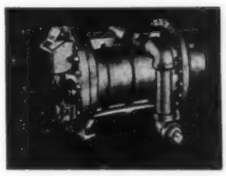
Jack Frazier, who has probably drilled more dry holes for himself along the Gulf Coast district than any other independent operator, has apparently opened oil production at the Eureka gas field, on the outskirts of the Houston city limits. His No. 1

(Continued on Page 98)

Drilling contractor and crew on East Texas well near Kilgore. Left to right: J. L. Gaby, driller; Leo Crouch, floorman; Jerome Jenkins, drilling contractor, prominent in the field since its discovery; Lloyd Matjasic, floorman; and Joe Scott, derrickman

BASSLER LIQUID METERS

Accurately measure all petroleum oil in any desired unit of measure and at any temperature. Provide indisputable record of producing oil whether flowing or on pump or gas lift. Also measures gasoline into pipe lines at production rate. Maintain extreme accuracy regardless of changes of flow, viscosity or line pressures. Installed at one-half to one-fourth the cost of gauge tanks. All capacities and pressures.



American Liquid Meter Company
P. O. Box 87, Alhambra, California
Mid-Continent Distributors:
Hanlon-Waters, Inc., Tulsa, Okla.

Standco NO-SMOKE

STANDCO BRAKE LINING

stands the gaff and gets the job done without scoring brake rims. See page 1940, Composite Catalog.

STANDARD BRAKE LINING CO.

Reduce Your Drilling Costs WITH

H. C. SMITH ROCK BITS

H. C. SMITH ROCK BIT
available in sizes of 5⅝" up to and including 13"

Send for Folder or see Composite Catalog

H C Smith Oil Tool Co.
MANUFACTURERS OF
Rock Bits • Core Bits • Drag Bits
P.O.Box 431, Compton, Calif.

Central West

By STAFF CORRESPONDENT

Benoist Oil-Yield Increase in New Centralia, Illinois, Field

MATTOON, Ill., Mar. 21.—The new Centralia field produces from the same formation as the Patoka field in Marion County, Benoist sand, but last week's results indicated that the Benoist in Centralia may be more prolific than it is in Patoka. In the past week wells were reported which pumped from 225 to 492 bbls. initially, and which pumped more on the second day than on the first.

Eleven oil wells and two dry holes were completed in the state in the past week, most of the oil wells having been finished in the Centralia pool. As usual the new work more than kept pace with the completed work.

Completed Wells

In Richland County, Pure Oil Co. No. 1 Ring-Burr, SE cor. NW section 17-3n-9e, proved a small producer. Pay at 2,947-58 feet yielded only 14 bbls. of oil the first day on the pump, with a small showing of salt water. Pure Oil Co. No. 9 Palmer-Taylor, C E half NW SE section 5-3n-9e, flowed 811 bbls. initially from pay at 2,945-70 feet, and Pure No. 13 Coen, C W half SW NE section 5-3n-9e, flowed 108 bbls. from pay at 2,950-67½ feet. Pure No. 2 Hundley, C E half SW NE section 5-3n-9e, flowed 963 bbls. in 24 hours from pay at 2,994-3,000 feet.

In Washington County, Frost & Vickers No. 1 Franks, SW NW NW section 28-1s-4w, had Benoist sand top at 1,063 feet and was drilled to 1,087 feet, where it was abandoned as dry.

In Clinton County, in the new Centralia pool, Adams Oil & Gas Co. No. 1 Marshall, near SE cor NE SE SW section 12-1n-1w, had Benoist sand at 1,374-87 feet. It was shot with 10 quarts and pumped 181 bbls. the first 24 hours. Shell Petroleum Corp. No. 1 Koelmel, SE SW SW section 1-1n-1w, had pay at 1,341-73 feet. It was given a 10-quart shot, and pumped 98 bbls. of oil the first day and 119 bbls. the second day. John Pugh Drilling Co. No. 1 Phoenix, NW cor. SE NE section 13-1n-1w, was shot in sand at 1,350-75 feet with 15 quarts and pumped 492 bbls. the first day and 470 bbls. the second day. John Pugh Drilling Co. No. 1 Williams, NE cor. SW NE NE section 13-1n-1w, shot with 10 quarts in sand at 1,355-75 feet, pumped 253 bbls. the first day and 331 bbls. the second day. Rourke & Moore No. 1 Quick, SW cor. NW SE NE section 13-1n-1w, got sand at 1,353-74 feet. It pumped 225 bbls. the first 24 hours, without a shot. Selegna Petroleum Co. No. 1 Meisenheimer, SW cor. NW SE NE section 13-1n-1w, pumped 150 bbls. the first day from pay at 1,352-72 feet, which had not been shot. Adams Oil & Gas Co. No. 1 Felton, NW SW NW section 1-1n-1w, pumped 194 bbls. in three days from Benoist sand at 1,349-73 feet, which had been shot with 10 quarts.

In Wayne County, the Texas Co. No. 2 Silverman, C E half SE SW section 16-3s-7w, was dry and abandoned at 3,335 feet.

New Operations

Sixteen first reports of new work were garnered in the past week.

In Richland County, Johnson & Anderson were moving in tools at No. 1 Montgomery, 1,503 feet from east and 1,550 feet from north lines of section 17-3n-9c.

In Marion County, H. E. Coyer No. 1 Mulvaney, SW NE SE section 6-2n-4e, spudded and shut down.

In Wayne County, Benedum & Trees moved in rotary tools to start No. 1 Gloyd, C E half E half SE section 32-2n-7e.

In the Centralia field in Clinton County, Shell Petroleum Corp. and Gulf Oil Corp. had derrick up for No. 1 Criley-Buehler, near C SE SW NW section 1-1n-1w. G. A. Blankenship was drilling at 1,300 feet in No. 1 Roth, 1,560 feet from east and 175 feet from south lines of SW quarter section 12-1n-1w. Shell Petroleum Corp. No. 3 Buehler, C NW NE NW section 12-1n-1w, is a Sullivan core-drill test which has spudded. Adams Oil & Gas Co. made a location for No. 2 Marshall, 215 feet from east and 300 feet from south lines of SW quarter section 12-1n-1w. Thompson & Self made a location for No. 1 Hanseman, 1,170 feet from north and west lines of NE quarter section 12-1n-1w. B. M. Hastings has rig up for No. 1 Becker, SW cor. NE SE NE section 13-1n-1w. T. T. Eason and others made a location for No. 1 Keller, SW cor. SE NE NE section 13-1n-1w. Bailey and others spudded No. 1 Brown, SE cor. NW NE SE section 13-1n-1w. J. D. Reynolds and others have rig up for No. 1 Harrison, SE cor. NE section 13-1n-1w. John Pugh Drilling Co. has rig up for No. 1 Aussicker, SW cor. SE SE NE section 13-1n-1w. Adams Oil & Gas Co. had rotary rigged up for No. 5 Hefter heirs, 1,938 feet from north and 1,475 feet from east lines NE quarter section 13-1n-1w; same company's No. 4 Hefter, 1,475 feet from east and 1,567 feet from north lines of NE quarter section 13-1n-1w, set 10¾-inch casing at 74 feet. Adams Oil & Gas Co. No. 2 Peter, 1,455 feet from west and 285 feet from north lines of NE quarter section 13-1n-1w, was drilling at 990 feet.

Near Completions and Wildcats

In Clinton County, Shell Petroleum Corp. No. 2 Buehler, SW SE SW section 1-1n-1w, was bottomed in Benoist sand at 1,359 feet, and casing was being run. Shell No. 2 Koelmel, NW SW SW section 1-1n-1w, had Benoist sand at 1,308-43 feet, with 5½-inch casing set at 1,303 feet. The crew was drilling plug. It had 1,000 feet of water in the hole. Thompson & Self No. 1 Hanseman, SE NW NE section 12-1n-1w, swabbed 200 bbls. in 24 hours from Benoist sand at 1,360-91 feet and later pumped 160 bbls. of oil and 10 bbls. of water in 12 hours. Adams Oil & Gas Co. No. 4 Schmitz, NE NE SE section 2-1n-1w, pumped 51 bbls. of oil in 19 hours after a 15-quart shot at 1,326-47 feet, but was not yet completed. Carter Oil Co. No. 1 Burhler, SW NE SW section 12-1n-1w, had sand at 1,360-80 feet and set casing at 1,353 feet and was drilling plug. Adams Oil & Gas Co. No. 1 Geary Heirs, NW cor. NE NW SE section 13-1n-1w, had sand at 1,380-97 feet and after a 5-quart shot produced an estimated 75 bbls. a day, but had not yet been completed.

In Jefferson County, Carter Oil Co. No. 1 Copple, C S half SE SE section 9-1s-2e, was drilling at 1,795 feet.

In Fayette County, John Farrelly No. 1 Lilly, SE cor. SW SE section 16-8n-3e, pumped and flowed 25 bbls. a day through 40 feet of cavings. The crew was cleaning out preparatory to shooting.

In Bond County, Whitehead & Morey No. 1 Pollard, NW SE SW section 26-6n-2w, was drilling at 2,900 feet.

In Effingham County, Kingwood Oil Co. No. 1 McWhorter, C E half SE NW section 15-6n-6e, was at a total depth of 2,001 feet. The crew had recemented the 13⅛-inch casing at 187 feet.

In Clay County, Vermilion Oil Co. No. 1 Smith, NE NW SW NW section 20-3n-8e, was at a total depth of 3,045 feet with no showing, but was preparing to drill ahead.

In Richland County, American National Drilling Co. No. 1 Everson, NE NE SE section 23-3n-9e, was drilling at 2,525 feet.

In Menard County, Johnson Bros. were drilling at 775 feet in No. 1 fee, C SW SW section 24-19-5w.

In Edgard County, Sun Oil Co. was drilling below 160 feet in No. 1 Goodwin, C W half NE SE section 22-13-12w, measuring from the Indiana principal meridian.

In Shelby County, Breazel and others have abandoned No. 1 Richardson, C NW NW section 35-12n-4e, at 198 feet.

In Fayette County Carter Oil Co. has rig up for No. 2 Dove, C E half SE NW section 15-8n-3e.

In Effingham County, Graham & Duncan were moving in rotary tools for No. 1 Pickers, C N half SE NW section 18-6n-7e.

In Richland County, Gordon and others No. 1 Lathrop, CEL NE SW SE section 14-3n-8e, was at a total depth of 3,059 feet, swabbing salt water and oil. Pure Oil Co. No. 14 Coen, C W half NE SW section 4-3n-9e, had pay at 2,933-55 feet, and saturated Dolomite at 2,985-90 feet. The well flowed 62 bbls. of oil in eight hours and was to be acidized.

In Edwards County, Leach Brothers were drilling at 3,125 feet in No. 1 A. D. Lee, SW NE SE section 11-1s-10e.

In Jefferson County, H. J. Foltz No. 1 Carrore, NE NE SE section 16-2s-1e, was drilling at 1,845 feet.

In Washington County, Bitterman and others were drilling at 1,174 feet in No. 1 Jesse, C SE NE section 16-3s-2w. Nollem & Benoist were drilling at 2,665 feet in No. 1 Kelly, NE NW NE section 25-4s-2e. Dee & Foltz were shut down at 1,718 feet in No. 12 Hamilton, SW SW NW section 20-4s-3e. Top of Glen Dean was logged at 1,625 feet.

In Jasper County, Obermeyer No. 1 Atkins, C N half NE section 36-6n-9e, was drilling at 1,620 feet.

In Indiana

Carter Oil Co. completed another well in Vigo County, Indiana, C S half NE NE section 15-10n-10w. It was acidized with 1,000 gallons and produced 32 bbls. of oil and 1,500,000 feet of gas in 24 hours. In Sullivan County, Dome Gas Co. No. 2 Hauger, NE cor. SW SW NE section 19-9n-9w, produced 75,000 feet of gas from sand at 259-77 feet and was completed.

OHIO

FINDLAY, Ohio, Mar. 21.—Completions in central Ohio were very light in the past week in spite of several wells which are drilling near the pay horizons.

In Cuyahoga County, Newburg Township, Rock Ridge Development Co. No. 1 Belt Terminal tract, Lot 305, made 280,000 feet of gas from the shale at 1,060 feet. In Parma Township, Dillon & McFrederick No. 1 John Tuefel, Lot 37, SW quarter, found the Clinton sand dry at 2,941-61 feet.

In Fairfield County, Walnut Township, City Natural Gas Works No. 1 Ernest A. Lamb, section 33, is good for 100,000 feet of gas from the Clinton sand at 2,084-2,108 feet.

In Guernsey County, Jefferson Township, George Kernodle No. 1 Charles Gunn, section 3, made 40,000 feet of gas in the Berea sand at 1,096 feet.

In Monroe County, Benton Township, Big Tee Oil & Gas Co. No. 1 Maywood Dye, section 30, was drilled to a depth of 1,772 feet and abandoned.

In Noble County, Marion Township, Bircher Oil & Gas Co. No. 1 E. I. Bircher, section 33, had 152,000 feet of gas in the Berea at 1,610-28 feet.

In Washington County, Grandview Township, Knob Oil Co. No. 1 Elizabeth R. Ashur, section 21, found the Keener sand dry at 1,648-75 feet.

In Monroe County, Washington Township, Roy Early No. 1 Alonzo Hill, section 6, flowed 50 bbls. of oil the first day and made about 400,000 feet of gas from the Injun sand at 1,271 feet.

Lima Field

In Seneca County, Liberty Township, Forest Oil Co. No. 1 Homer Martin, section 25, found the top of the Trenton at 1,238 feet, and a show of oil and gas at 100 feet in. A small quantity of oil was bailed and some gas was in evidence after the shot.

In Putnam County, Blanchard Township, G. K.

KOBE

Heat-Treated SCREEN CASING

The proper functioning of screen casing is important to the production of oil inasmuch as it materially affects the pressure gradient in the immediate vicinity of the well, and also controls the production of sand with the oil.

Proper functioning has been literally built into every length of Kobe Heat-Treated Screen Casing through exhaustive research and careful, precision engineering of slots to meet actual sand and fluid conditions as they exist in the well.

The Kobe laboratory and personnel are available at all times for making screen analyses and slot bridging tests of formation samples, without cost or obligation.

KOBE, INCORPORATED

(Pronounced KŌB)

3040 East Slauson Avenue . . . Huntington Park, California

Branch Office: 3119 South Robinson Avenue, Oklahoma City, Oklahoma

Gulf Coast Representative: Brown-Hovis, Inc., 2214 Campbell Street, Houston, Texas

Foreign Representative: Petroleum Machinery Corp., 30 Rockefeller Plaza, New York, N. Y.

Rogers and others No. 1 Fred Hector, section 22, encountered the top of the Trenton at 1,350 feet, and now drilling 40 feet in with no shows.

In Ross County, Union Township, 6 miles northwest of Chillicothe at Maple Grove, the Glenwood Oil & Gas Co. on the Glenwood Park farm are drilling at 700 feet on a wildcat test headed for the Trenton rock.

EASTERN KENTUCKY

ASHLAND, Ky., Mar. 21.—Four oil wells and 12 gas wells comprised the record of completions reported in the past week in the eastern Kentucky fields. An increase in drilling operations is also reported.

In Pike County, Bee Whitis is down 3,025 feet in No. 2 Johnson on Island Creek. Mountain Oil & Gas Co. has shut down in Big lime in No. 1 O. T. Alley at Blackberry.

In Perry County, Hazard Gas Co. completed No. 1 John Watts, on Macer Creek, at total depth of 3,107 feet in shale, with a production of 116,000 feet of gas daily.

In Lawrence County, Rockcastle Gas Co. is drilling at 1,000 feet in No. 2 J. W. Hall on Mill Branch.

In Powell County, South Penn Oil Co. is down 550 feet in No. 12 Adams & Lamberson on South Fork in the district of that name.

In Floyd County, Kentucky-West Virginia Gas Co. completed No. 568 Samuel Dillion, on Ivy Creek of Levisa Fork at a total depth of 1,406 feet, in Maxon sand, with production of 2,433,000 feet of gas in 48 hours. The same firm is idle at No. 567 M. Slone on Levisa Fork and is down 500 feet in sand in No. 569 Jeff Jervis farm on Home Branch of Buffalo Creek, and is building road to No. 570 Clarence Neeley farm nearby. Kentucky-West Virginia Gas Co. was drilling at 1,493 feet in Big lime in No. 5,233 John F. Burchett farm on Cow Creek.

United Carbon has moved a rig to location for No. 5 T. B. Williamson on Levisa Fork. Fred Williams completed No. 1 Woods in Big lime at a total depth of 1,510 feet with a daily production of 2,000,000 feet of gas. Same operator completed No. 5 Stanley Heirs on Levisa Fork at 2,790 feet, with a daily flow of 100,000 feet of gas, and also drilled to shale after the oil was exhausted in No. 2 W. Honaker on Camp Branch.

Fred Williams was drilling at 400 feet in No. 3 W. Honaker on Camp Branch with operations nearly complete in shale. The same operator is drilling deeper in No. 1 on the same land. Hale and others completed No. 1 Caldwell Heirs on Toms Creek at total depth of 2,803 feet, with a daily flow of 116,000 feet of gas. Stevens and others were drilling at 1,860 feet in No. 1 John Goble on Cow Creek. J. A. Allen and others completed No. 1 Charles Collins on Home Branch at total depth of 2,603 feet in Injun sand with a production of 300,000 feet of gas daily.

In Johnson County, Francis & Webb completed No. 3 James Wells on Daniels Creek at a total depth of over 2,000 feet and a daily production of 143,000 feet of gas. E. J. Evans completed No. 3 Thealka Coal Co. at Road Fork at total depth of 1,790 feet in shale with flow of 100,000 feet of gas daily. E. J. Evans was drilling at 800 feet in No. 4 Thealka Coal Co. at Road Fork.

In Martin County, Kentucky-West Virginia Gas Co. was testing an oil showing at 1,493 feet in No. 5,236 C. W. Preece on Coldwater Fork. The same firm was drilling at 850 feet in slate and shale in No. 5,237, Preece land, and is grading location for No. 5,239 on the same farm. The Kentucky-West Virginia Gas Co. was drilling at 832 feet in No. 5,238 M. M. Pratt nearby.

Warfield Gas Co. was preparing to start drilling No. 4,772 Jeff Newberry on Blacklog Creek. Same company has road completed to No. 4,733 Jeff Newberry on Lick Branch, and was getting ready to drill on the Clementine Goble and others land on Spence Branch. Virginian Gas & Oil Co. completed No. 1 V-1,255 Nancy J. Cassady farm on Big Creeked Creek at total depth of 1,541 feet with a production of 60 bbls. of oil daily. The same firm also completed No. 2 V-1,259 on the same land at total depth of 1,506 feet in Maxon sand with a flow of 35 bbls. of oil daily.

The Virginian Gas & Oil Co. completed No. 1,260 Federal Gas, Oil & Coal Co. on Little Crooked, in Maxon sand at 1,456 feet, with a flow of 22 bbls. of oil daily. The same firm is building road to No. 3 V-1,262 Virginian Gas & Oil Co. land on Big Crooked. Hale and others completed No. 1 Hardin, at Ashlog, at 2,803 feet with flow of 116,000 feet of gas.

In Magoffin County, Jenkins No. 1 John Adams on Short Fork was completed at 1,168 feet in Weir sand with an initial production of 6 bbls. of oil before the shot.

In Knott County, Operator Spurlock made a location for No. 2 Charles Hicks on Jones Fork. Inland Gas Co. is moving to location of No. 1 on the Maryland Beverly land on Jones Fork.

In Lee County, South Penn Oil Co. is drilling at 570 feet in No. 10 Flahaven Land Co. land on Big Sinking in the Big Sinking district. C. G. Mays is down 865 feet in No. 9 Medley S. Cole, on Little Sinking in the Big Sinking district.

WESTERN KENTUCKY

OWENSBORO, Ky., Mar. 21.—Four oil wells were added in the western Kentucky fields in the past week. Two old wells are being deepened to the second break in the Mississippi lime, and one of the deep tests which started from the grass roots is drilling in Corniferous lime. Three other deep tests are making progress.

In Breckenridge County, Tar Springs district, William Rollins and others No. 1 Acos Brothers, deep test, was fishing at 470 feet. In the Cloverport district, Flesher, Galey and others No. 4 Murray Tile Co., deep test, was drilling at 1,695 feet. Top of the Corniferous lime was logged at 1,650 feet.

In Daviess County, Utica district, Daugherty & Ellis No. 5 C. W. Howard is a 50-bbl. completion. Jett sand, 1,058-69 feet, was shot with 30 quarts. In the Pleasant Ridge district, S. J. Serman No. 2 Joe Johnson, an old well, is being drilled deeper to the second break in the Mississippi lime.

In Henderson County, Hamilton Ferry district, Hoosier Drilling Co. No. 1 C. T. Blackwell was setting 8¼-inch casing at 1,390 feet.

In McLean County, North Livermore district, J. C. Miller, Trustee No. 9 Mrs. Fannie Foley is an 80-bbl. completion in Bethel sand at 1,102-22 feet. In the Semiway district, A. D. Reece and others No. 3 C. S. Vickers is a location.

(Continued on Page 87)

Cyclopaedic Text Book on Science of Petroleum

To supply a need for an authoritative work of reference on the general and particular application of science and scientific method to the petroleum industry, the Oxford University Press has just published "The Science of Petroleum," a four-volume comprehensive treatise containing 3,192 pages and over 3,000,000 words, with numerous diagrams and illustrations.

In a foreward to the American edition, W. C. Teagle describes it as a cyclopaedic text book, pointing out that the operation of the world oil industry is now very largely in the hands of technical experts, geologists, physicists, chemists and engineers, a change in the complexion of the responsible operating personnel that has occurred more rapidly perhaps than in any other field of comparable importance. There has not been, he says, sufficient time for the building up of any complete set of authoritative tests on all of the special applications of science and technology involved in the operations of the oil industry but he believes this text book is a practical solution of the problem, a good plan well executed.

Lord Cadman, past president of the Institution of Petroleum Technologists, London, in his foreword to the English edition, stresses the overwhelming importance of science in industry and adds that in no branch of human endeavor has the application of exact knowledge been so apparent as in the exploring, winning, refining, transport, and distribution of mineral oil. He writes that these books give a vivid and comprehensive picture of present activities and future possibilities, recording the latest developments of every phase of the industry and displaying in almost every section the impact of current scientific thought on the multitudinous problems arising almost day by day.

The managing editor was Dr. A. E. Dunstan, chief chemist of the Anglo-Iranian Oil Co. Professon A. W. Nash, head of the department of Oil Engineering and Refining at the University of Birmingham, England, was editor of contributions. Dr. Benjamin T. Brooks, consulting chemical engineer, New York, was editor for the United States, and Sir Henry Tizard, rector of the Imperial College of Science and Technology, London, was consulting editor. Associate editors represented Great Britain, the United States, France. Germany, Holland, Poland and the U.S.S.R.

The four volumes cover every branch of the industry in signed articles by recognized authorities on each subject. Part 1, Origin and Production of Crude Petroleum, deals with nomenclature. statistics, distribution, migration, accumulation. geological and geophysical methods, methods of redrilling, sampling, coring and bore-hole surveying, production, oilfield waters, equipment, measurement of oil, gas and water in oil fields, pipe lines and storage.

Part 2 covers the chemical and physical principles of the refining of oil: Nature and chemistry of crude, physical and chemical properties of petroleum and its products, determination, correlation and collected data, general analyses and testing of products, development of refining, casing-head gasoline extraction, natural and refinery gases, and distillation, refining processes, physical and chemical, solvent extraction, dewaxing, gas pyrolysis and polymerization, cracking, hydrogenation, engineering and chemical engineering as applied to refining, metals and alloys in refinery equipment, corrosion, instruments and meters. electrification, power and water supplies, and fires.

Part 3 deals with the utilization of mineral oils and their derivatives. Part 4 is devoted to detonation and combustion and Part 5 to bituminous materials and their products.

Over 300 authorities contribute about 400 articles, constituting a veritable encyclopaedia on oil, invaluable as a work of reference. Recognizing that the technique of the industry advances very rapidly, it is proposed to issue supplementary volumes under the same editorship from time to time when the progress of research and technique makes it necessary. The serviceability of the edition is greatly facilitated by a complete index by subjects and authors.

"The Science of Petroleum" may be purchased through the Book Department of The Oil and Gas Journal at the regular retail price of $85.00. As the publishers of this set add shipping and insurance charges where the customer is to be billed, a saving can be made by forwarding full payment with the order. The books will be forwarded promptly upon arrival of order and payment.

North and East Texas

By MITCHELL TUCKER

Deep Pay Opened in Archer County by 3,000-Bbl. Well

WICHITA FALLS, Tex., Mar. 21.—The K.M.A. pool of Wichita and Archer counties experienced one of its most active and important weeks since the discovery of the new deep pay horizon. As an outcome of the seven-day developments actually thousands of heretofore unproven acres are thrown open to development. A 3-mile western extension for the pool itself, as well as the discovery of a new pool in Archer County (or a possible extension of K.M.A. as future developments may reveal) marked the highlights in the past week's activity.

The new deep strike in Archer County was the Hull & Silk and Helmerich & Payne, Inc., No. 1 Wilson, which, it is believed, will bring almost as much lease and royalty play to northern Archer County as the K.M.A. pool, in its early stages, did to Wichita County. Having been in the testing stages for two weeks, the true significance of the test was not seen until it revealed itself to be an estimated 3,000-bbl. discovery well. It is in the center of Block 25, A.T.N.C.L. Survey, about 3½ miles southeast of Holiday, and approximately 7 miles southeast of the K.M.A. pool. It is in the center of a large shallow producing field and is separated from K.M.A. by a number of dry holes in the southeastern part of Wichita County. After drilling plug from the casing, the hole filled with oil and made an estimated 127 bbls. of oil the first hour of flow through open casing. The well was then shut in for the erection of storage, when it was again opened and made slightly more than 400 bbls. of oil on a full four-hour test. Gas flow was estimated at 5,000,000 feet and shut-in pressure on the casing was 450 pounds. The oil tested about 43.7 gravity. The well topped saturated sand at 3,820 feet and drilled it to 3,860 feet, total depth. Casing was cemented at 3,829 feet.

The lease has been given an outlet by the Texas Pipe Line Co. which will carry the potentially tested oil after tubing is run. Geologists have identified the pay section as the Strawn series; however, it will probably also become known as the K.M.A., since authorities have never agreed on the producing horizon of that pool itself. The well is accredited with having opened a new Archer County field, since it is more than 6 miles from the K.M.A. pool proper; however, information obtained by the exploration of the intervening area will either verify or discredit this belief.

Three locations have already been made in the area; W. B. Omohundro No. 1 W. B. Owens and W. S. Snoddy No. 1 Jones & Collum, both in the T. Freeman Survey, Abstract 134; as well as No. 2 Wilson, staked by the discoverers as a south offset to their new strike.

On the west side of the K.M.A. pool proper, Bolin & Whittington No. 1 Waggoner, added several hundred acres to the field by the completion of their outpost for an estimated 700 to 1,000 bbls. per day. The well found oil sand at 3,928 feet and penetrated it to 3,964 feet, total depth, plugged back from 3,974 feet. The well is in SW cor. section 21, Block 7, H.&T.C. Survey, Abstract 117, and is about 3½ miles north of Geier Bros. & Jackson No. 1 Ancell, a dry hole.

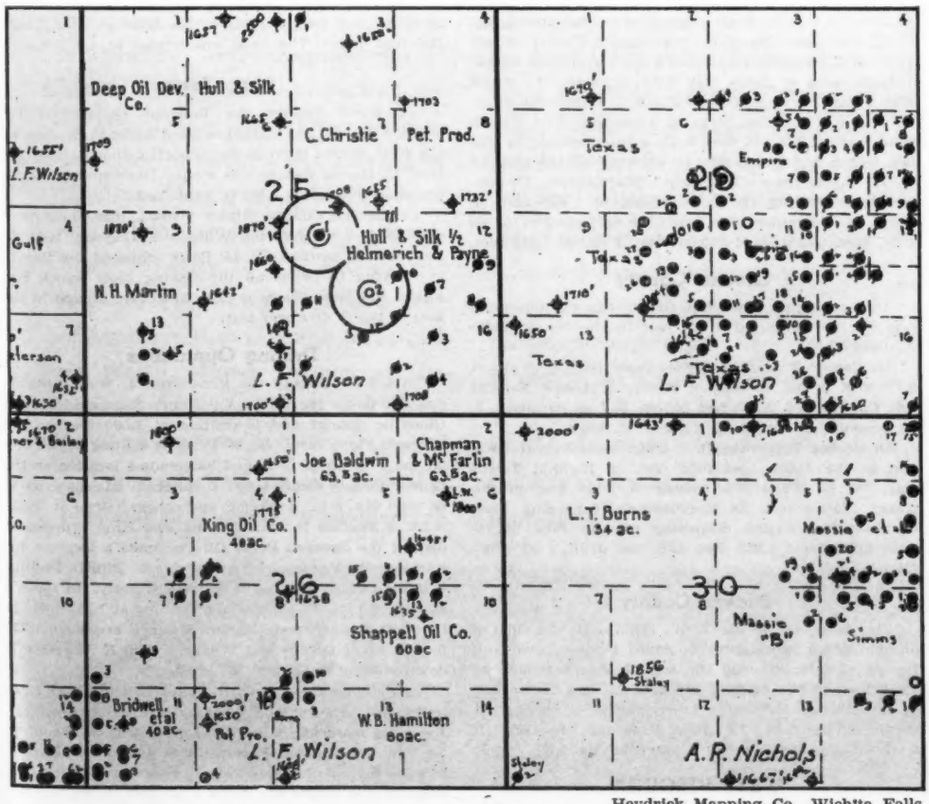
Possibility of another mile extension on the extreme northeastern corner of the pool was seen in the Hanlon-Buchanan No. 1 Fassett-Tuttle. The K.M.A. lime was topped at 3,920 feet and a saturated section was topped at 3,970 feet, below which point the well is now drilling. Located in the M. Templeton Survey, Abstract 543, the well is about a mile north of the same operator's No. 2 Fassett-Tuttle, extreme northeastern producer in the pool.

Also on the west side of the pool and about 2 miles north of the Bolin & Whittington No. 1 Waggoner, Monty Staniforth No. 1 Waggoner indicated a mile west extension when it cored oil sand from 3,782 to 3,788 feet after topping saturation in lime at 3,739 feet. Operators plan to core deeper in search of a thicker zone of saturation.

The first recent major extension for the east side of the pool was seen when Flannigan & Modessett No 1 Texas Mortgage Co., NW cor. Block 1, J. McCool Survey, Abstract 192, Palo Pinto County school lands, topped saturation in lime at 3,870 feet. The wildcat is coring ahead preparatory to testing the section. It is about 2 miles east of the Clyde Texan Oil Fields, Inc., No. 1 Burnside, on the eastern side of the pool.

Hopes for Ordovician production from the contact zone of the K.M.A. lime and the Ellenburger of Lower Ordovician were dimmed when salt water was uncovered in Continental Oil Co. No. 1 Waggoner, Lot 2, section 11, B.S.&F. Survey, Abstract 381. Water is believed to have broken in after the bridge was knocked out when tubing was being lowered to test a saturated zone from 4,094 to 4,114 feet. The test is approximately 1½ miles southeast of the Joe Worshan No. 1 Waggoner, and is a north offset to the Melat & Graham No. 1 Waggoner, Eaves Survey, first producer north of the Wichita River.

After a nitroglycerin shot failed to show results, the Bert Ligon-Huff No. 1 C. Collums, T. J. Tuler Survey, wildcat 4 miles west of Wichita Falls, was abandoned at total depth of 4,356 feet to discourage hopes for deep production in this far reached area.



Heydrick Mapping Co., Wichita Falls

Hull & Silk and Helmerich & Payne No. 1 L. F. Wilson (indicated by circles) have discovered a new deep sand pool for northern Archer County in their estimated 3,000-bbl. well from the same producing horizon as the K.M.A. pool 6 miles to the north

Clay County

A new 4,500-foot wildcat was staked last week in Clay County. W. P. Luse No. 1 Hapgood, Block 68, Marion County school lands. Location is 2 miles west of the Walter H. Gant field, which is producing from the 4,000-foot level. Rig is being moved on the grounds and drilling is scheduled to commence this week.

EAST AND EAST CENTRAL TEXAS

DALLAS, Tex., Mar. 21.—During the past week the giant East Texas field climbed back up to a previous production standing of over 500,000 bbls. of oil per day. Texas Railroad Commission records showed the field to be producing 500,072 bbls. per day. This is the most it has produced under proration laws since September, 1933, record year in production. There are now 24,720 producing wells in the field.

The Flag Lake field, near the town of Tool, in northwestern Henderson County, received new interest last week when its third well was completed for an initial flow of 417 bbls. of oil per day. It is Hunt, McMillian & DeArman No. 2 Dowdy, George Hancock Survey No. 7, and is an east offset to the discovery well. Production test was made through three-sixteenths inch tubing choke, and was for a full 24-hour period with flowing pressures of 150 pounds on casing and 310 pounds on tubing. The gas-oil ratio is 225 to 1, indicating a gas flow of approximately 100,000 feet. Production is from a 4-foot section of Woodbine sand at 3,087-91 feet. Hines & Hancock No. 1 Dillard, which was brought in approximately two weeks ago for an estimated 4,000 to 6,000 bbls. initial production, remains shut in and officially ungauged. Entrance of

(Continued on Page 95)

Eastern Field Report

By STAFF CORRESPONDENT

Bradford's Sixth Big Well; 2 Rotaries in Westmoreland

PITTSBURGH, Pa., Mar. 21.—The sixth well in the 1,000-bbl. class completed in the Music Mountain pool in the Bradford area in McKean County, northwestern Pennsylvania, came in in the past week. It was the property of the Minard Run Oil Co. (Emery interests). Four days previously the Niagara Oil Corp., a subsidiary of the Forest Oil Corp., completed the fifth of the big wells, all of which produced from what is locally known as the Sliverville sand. Each of the firms named has three wells in the pool, all of which started at 40 bbls. or more per hour. None of the wells was allowed to produce to capacity. A mile north of the producing area, which is near the town of Lewis Run, the Healey Petroleum Corp. has a 35-bbl. well in the same sand at 1,797 feet. The Minard Run Oil Co. test, 4,200 feet south of the six gushers, was in the top of the pay from which it made its first flow. Across the property line from the latest Minard Run completion which produced at 1,722 feet, Williams & Beckwith were attempting to drill while their well was making from 5,000,000 to 7,000,000 feet of gas at a depth of 1,732 feet.

Two new deep tests are starting in Southwest Pennsylvania which will be of great interest to that district as both will be drilled by rotaries. In Westmoreland County, the Peoples Natural Gas Co. is building derrick for a test on the John S. Marshall farm in Penn Township. It is 1,650 feet east of Longitude 79 degrees 35 minutes and 9,570 feet north of Latitude 40 degrees 20 minutes, on the Greensburg Quadrangle. The elevation is 1,180 feet and it is scheduled for the Oriskany sand. It will be the first test to this structure on the Grapeville anticline. Loffland Brothers of Tulsa, Okla., are the contractors.

In Allegheny County, South Penn Oil Co. is building a road to a location for a deep test on the Fred Backhaus farm in West Deer Township, on the New Kensington Quadrangle, 1,200 feet east of Longitude 79 degrees 55 minutes and 6,700 feet north of Latitude 40 degrees 35 minutes, and the surface elevation is 1,160.84 feet. It is on the Kellerburg anticline and northeast of the unfinished test on the Christian Z. Schove farm which is shut down with a whipstock cemented in place at 5,970 feet. Owing to a serious fishing job at 6,238 feet due to a gas blowout in the Marcellus shales, no attempt is being made to complete this test with cable tools due to the possibility of additional gas pockets in that formation. The new test will be drilled with a rotary, the contractor being C. C. Herndon of Tulsa, Okla. If this test proves successful, it is contemplated moving the rotary to the Schove farm test to complete it.

In West Virginia, the test of the Pittsburgh & West Virginia Gas Co. on the Jesse Chapman farm in Otter district, Clay County, has drilled through the Oriskany sand which proved void of production. The top of the sand was at 6,319 feet with true sand to 6,357 feet and sand and lime to 6,365 feet. From that point to the bottom, 6,451 feet, there was lime, shells, and shale conglomerate, with no second sand showing as in Doddridge County. This well will be plugged back to the Salt sand where there was a showing of a fair amount of gas.

SOUTHEAST OHIO

In section 21, Grandview Township, Washington County, Southeast Ohio, Pennington and Schaffer completed a fair well on the Curtis and Price lease in Cow Run sand at 804 feet. It produced 12 bbls. the first day before the shot and 30 bbls. the day after the shot. In the same section, H. E. Dickson drilled a dry hole on the Elizabeth Asher farm through the Injun sand to 1,600 feet.

In the northeast quarter of Lot 13, Salem Township, Washington County, the Harry Huffman test on the E. W. Huffman farm bottomed in Berea grit at 1,678 feet, is a gas well gauging 80,000 feet a day. It also had a very light showing of oil.

In Jefferson County, E. E. Ellis No. 2 and others drilled No. 4 James A. Telfer in section 29, Saline Township, through the Berea sand to 1,275 feet and it was a dry hole.

SOUTHWEST PENNSYLVANIA

The deep test of the Potter Development Co., Snee and others on the Summit Hotel lease on Chestnut Ridge in South Union Township, Fayette County, is drilling at 6,755 feet with some additional gas showing. At 6,740 feet, the gas increased to 275,000 feet a day and thence followed a shale break to 6,745 feet. At 6,752 feet, the formation again hardened so that only 3 feet were made the next day to 6,755 feet, at which point the gauge showed 308,000 feet a day. This test is not correlating with the No. 1 on the same lease, as the gas volume to date has been very much less and the intervals at which the gas was picked up greater. This is probably due to fractured Onondaga limestone in which the tools are drilling.

North of the National Highway in Wharton Township, the Greensboro Gas Co. is drilling at 3,000 feet on the J. R. Thompson farm. In North Union Township, Wasson & Co. have reached 1,300 feet on the J. H. Sorg farm.

Three gas wells were completed in Southwest Pennsylvania during the week. In Morris Township, Washington County, Duquesne Gas Co. completed the test on the J. E. Day farm at 3,013 feet. The Fifty Foot sand was at 2,880-2,935 feet, and the Thirty Foot sand was at 2,976-3,012 feet. Both formations were productive and the final gauge was 163,000 feet a day.

In Somerset Township, Washington County, Wherry-Polonis and others completed the test on the Joseph Polonis farm at 2,975 feet with a gauge of 100,000 feet a day. Furman Nuss and others completed a test on the R. C. Garber farm at 3,008 feet. The Fourth sand was at 2,665-85 feet with a total volume of 75,000 feet a day and a shut-in pressure of 410 pounds.

In Nottingham Township, Washington County, Keystone Drilling Co. was drilling at 1,300 feet on the J. M. Balentine farm, with the Salt sand at 1,180-1,267 feet. Gas gauged 750,000 feet a day at 1,259 feet.

Greene County

In Washington Township, Greene County, Equitable Gas Co. is drilling at 1,728 feet in the No. 2 Sadie A. Connor.

In Center Township, South Penn Oil Co. is down 2,775 feet in No. 12 Samuel Harvey. Carnegie Natural Gas Co. reached 2,205 feet in No. 3 J. H. Orndoff. J. B. Orndoff has rigged up No. 2 G. M. Scott.

In Greene Township, O. I. Dille is drilling at 1,852 feet in the Jacob Livingood test. In Richhill Township, W. L. Walters is fishing at 1,175 feet in the Harry Clutter test. In Monongahela Township, Fred Garrison has started deepening on the Jane Stoneking farm from 1,935 feet and was drilling at 1,980 feet.

Beaver County

The deep test of the T. W. Phillips Gas & Oil Co. on the James Smith farm in South Beaver Township, Beaver County, reached the top of the Onondaga at 4,338 feet and is drilling 110 feet in that formation.

In Hanover Township, Lewis Sarver is drilling on the L. Sarver farm. In Green Township, the Oak Oil & Gas Co. is drilling No. 4 Mary M. Bartley.

WEST VIRGINIA

No oil wells were completed in West Virginia during the week. There were several new gas wells. In Barbour County, the Hope Natural Gas Co. completed No. 7800 on the Indian Fork Coal & Coke Co. land in Union district. The Benson sand was at 4,145 feet with about 75,000 feet of gas at 4,146-54 feet, total depth 4,317 feet.

In Cabell County, the Nida Gas Co. completed a fair well on the C. L. Ritter and J. S. Perry lease in Guyandotte district in Brown shale at 2,528-2,950 feet. It gauged 1,568,000 feet a day from the shale. In McComas district, the Gibbs Gas Co. completed a test on the C. C. Phillips farm. The Berea sand gauged 29,112 feet a day and the Brown shale 82,000 feet a day, total depth 3,675 feet.

In Gilmer County, Everett Hughes completed a test on the Whiting farm in Glenville district in the Salt sand at 1,055 feet and it gauges 100,000 feet a day. In Center district, the test of the Hope Natural Gas Co., No. 7799, was bottomed at 3,283 feet and is dry and being abandoned.

In Marshall County, J. C. Ruckman completed a small gasser on the Mike Moszner farm in Franklin district at 480 feet. Cow Run was at 449 feet and it will make a small gas well from 480 feet. On Turkey Run in Sand Hill district, C. E. Dague and F. Ebeling have started a test on the C. W. Dague farm.

Oriskany Gas Field

The South Penn Oil Co. completed a gas well in the Campbells Creek pool in Malden district, Kanawha County, No. 4 on the Kate C. Scott farm. Oriskany sand was topped at 4,915 feet with gas at 4,918 feet down. The total gauge at 4,928 feet was 1,500,000 feet a day.

In Poca district, the United Fuel Gas Co. completed No. 4779 on the A. A. and William Beane farm at 4,949 feet with a final gauge after shot of 7,883,000 feet a day. The sand was topped at 4,912 feet.

Deep Tests

In Wood County the Belmont Quadrangle Co. skidded the rig and started drilling again in the test on the C. D. White farm in Steel district and is down 150 feet. In Harris district the Potter Development Co. is casing at 490 feet the W. H. Orem test.

In Jackson County, Ripley district, this company is drilling at 1,856 feet the William T. Chancey test. In Ravenswood district, W. H. Petry whipped the line in two trying to bring up the fishing tools which had locked the jars. There is now 2,000 feet of line in the hole in the D. O. Curry test.

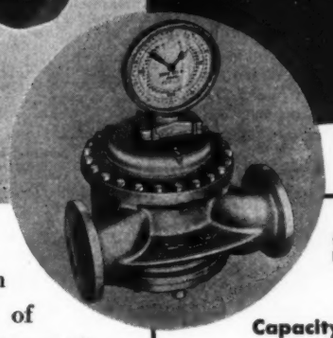
Drilling Operations

In Gilmer County the Pittsburgh & West Virginia Gas Co. has a rig up on the Henry Simmons farm in Glenville district and is drilling at 1,500 feet on the Virginia Floyd farm. W. H. Petry is drilling at 350 feet on the T. A. Redd farm and has made a location on the Gilmer County Court land. E. L. Bush has material in to start No. 2 G. B. Young and others. Oran R. Bush made a location for No. 2 Anna Bell King. In Center district the Jackson River Oil Co. made a location for a test on the Upton and Twyman lease. Phil D. Phillips is down 1,927 feet in No. 3 Belinda R. Fetty. In DeKalb district the Big Run Gas Co. is drilling at 1,588 feet in the G. O. Bennett test. Massey & Jarvis are down 1,300 feet in No. 1 Collins and Weaver. Paul K. Weekley is down 975 feet in No. 2 F. W. Beall.

In Calhoun County, O. D. Jones is drilling at 1,025 feet in No. 2 Ira Parsons, Washington district. Gerald D. Jones has material on location for No. 2 H. H. Bennington. In Lee district, Forest Riggs and others have a location for a J. S. Riggs test. In Sherman district, Guy Boggess and others are down 2,125 feet in No. 2 Allen Wilmoth. Verl Stewart and others have material in for a G. B. Francis test. In Center district, Pearl Adams is down 600 feet on the L. C. Jarvis farm.

(Continued on Page 87)

NEW SMITH METER!



● Oil men have long appreciated the speed, accuracy, low resistance, simplicity, and compactness of Smith Meters and have asked for them in larger sizes. They are now available in larger sizes. The model illustrated has a normal capacity of 450 gallons per minute and a maximum capacity of 550 gallons per minute. It maintains the high degree of accuracy that is characteristic of all Smith Meters throughout its entire flow range—from 550 down to 20 gallons per minute.

The *exclusive* Smith metering principle plus precision engineering and rugged construction allows continuous flow of the liquid stream without restrictions or interruptions. Friction is negligible in this rotary type meter. Accuracy is unaffected by sudden fluctuations in the rate of flow.

Smith Meters are built in many sizes and designs to answer a wide range of metering requirements in the petroleum industry. For detailed information, write Smith Meter Co., Roosevelt Building, Los Angeles, California, or any office listed below. Complete stocks are carried at all branches.

SMITH METER
Model 2L-450

Capacity, normal, 450 g.p.m.
Maximum, 550 g.p.m.

Standard equipment includes horizontal counter as shown, with 6-figure totalizer which cannot be set back and a 4-figure delivery register with concealed shutter, convenient set-back, and one-tenth gallon indicator.

Vertical Dial Counters with 10-inch face are also available for 500 or 2000 gallon registration. They are interchangeable with horizontal counters.

SMITH METER CO.

SUBSIDIARY—A. O. SMITH CORPORATION, MILWAUKEE, WIS.

ROOSEVELT BUILDING **LOS ANGELES, CALIFORNIA**

Branch Offices and Warehouses: **NEW YORK, PITTSBURGH, CHICAGO, TULSA, HOUSTON, LOS ANGELES**

Rocky Mountain Area

By
T. R. INGRAM

Four Big Wells in Wyoming; New Work Being Resumed

DENVER, Colo., Mar. 21.—Wyoming had an active week with several important completions. The Ohio Oil Co. and California Co. No. 4-A Kyle, on Big Medicine Bow, made 70 bbls. an hour through the tubing. The Lance Creek field was extended one-fourth of a mile west in C. L. Price No. 1 Lamb, which averaged 63 bbls. an hour in the Minnelusa pay. The Continental Oil Co. No. 3 Apex-1 flowed 2,402 bbls. in 24 hours from the Leo sand. The Argo Oil Co. No. 6 Ford made 1,680 bbls. in 24 hours. Four new operations were getting under way.

The small gas wells were completed in the town of Hardin, Big Horn County, Montana, and one 20-bbl. well on the west side of Kevin-Sunburst. Several Montana operations shut down for the winter are resuming.

NEW MEXICO

An outpost more than 2 miles southeast of Jal sand production in Lea County was showing as a probable producer. It was George F. Getty, Inc. No. 1 Riggs, NW cor. section 1-26-37, wildcat. Pay was topped at 3,235 feet, total depth 3,358 feet, it was plugged back to 3,346 feet and oil rose an estimated 2,000 feet in the hole. Operators were preparing to test.

Completions of the week in Lea County included a wildcat failure at Harry Leonard No. 1 Ginsberg, C SW NW section 29-25-38, in extreme southeastern Lea County. It was abandoned at 3,735 feet, total depth, in sandy lime without showing oil, gas or water.

Other Lea County completions: Repollo Oil Co. No. 4 Roach, NW NW SW section 21-20-37, total depth 3,875 feet, plugged back to 3,860 feet, water intruded and it was abandoned.

Continental Oil Co. No. 1-B-14 Sanderson, NE SW SE section 14-20-36, topped pay at 3,790 feet, was bottomed at 3,872 feet, and flowed 36 bbls. of oil an hour through choke.

Ohio Oil Co. No. 1 Hardy, NE NE SE section 20-21-37, flowed 40 bbls. of oil daily through tubing from pay topped at 3,720 feet, total depth 3,750 feet.

Tide Water Associated Oil Co. No. 2 Day, C E half NW NW section 6-22-36, found pay at 3,801 feet, total depth 3,848 feet, and set packer at 3,781 feet. After perforating below packer and acidizing, it flowed 24½ bbls. of 32.9-gravity oil an hour, with 1,500,000 feet of gas.

Texas Pacific Coal & Oil Co. No. 8-A State, Account 2, C SE SE section 7-22-36, flowed 1,032 bbls. of oil in 12 hours from pay topped at 3,760 feet, total depth 3,838 feet. Gas measured 2,348,000 feet daily.

Repollo Oil Co. No. 3 Christmas, NW NW NE section 28-22-37, had pay at 3,515 feet, was bottomed at 3,726 feet and plugged back to 3,664 feet. It had initial production of 36 bbls. of oil in two hours and now is flowing 30 bbls. of oil daily.

Continental Oil Co. No. 3-E-17 State, C NW NW section 17-22-36, found pay at 3,850 feet, total depth 3,877 feet, and flowed 119 bbls. of oil and 16 bbls. of water through choke in 24 hours, with 770,000 feet of gas.

Same company's No. 1-B-9 Elliott, C SW NW section 9-22-37, flowed 70 bbls. of oil daily through choke from pay topped at 3,640 feet, total depth 3,724 feet.

Continental Oil Co. No. 1-A-22 Elliott, C SW SW section 22-22-37, was completed at 3,592 feet, total depth, flowing 64 bbls. of oil daily through choke from pay found at 3,539 feet. Gas gauged 3,590,000 feet.

C. T. McLaughlin No. 1 Imperial Royalties, NW SW NW section 9-24-37, had pay at 3,485-3,610 feet, was bottomed at 3,640 feet, and flowed 109 bbls. of oil daily through tubing.

Continental Oil Co. No. 1-A-20 Jack, C NE SE section 20-24-37, flowed 35 bbls. of oil in six hours after a shot and through choke. Oil was accompanied by 1,140,000 feet of gas. Top of pay was 3,490 feet, total depth 3,585 feet.

Repollo Oil Co. No. 4-D Stuart, NE NW SW section 10-25-37, had pay at 3,450 feet, total depth 3,461 feet, was shot and flowed 68 bbls. of oil through tubing in one and one-half hours. Gas volume was 2,000,000 feet.

Culbertson & Irwin No. 2 Alston, NW SW NW section 26-25-37, found pay at 3,205-38 feet and 3,287-3,300 feet, total depth 3,342 feet, and flowed 203 bbls. of oil daily through tubing.

Anderson-Prichard Oil Corp. No. 1 Harrison, SW cor. section 23-25-37, flowed 125 bbls. of oil daily from pay at 3,260-3,300 feet, total depth 3,347 feet.

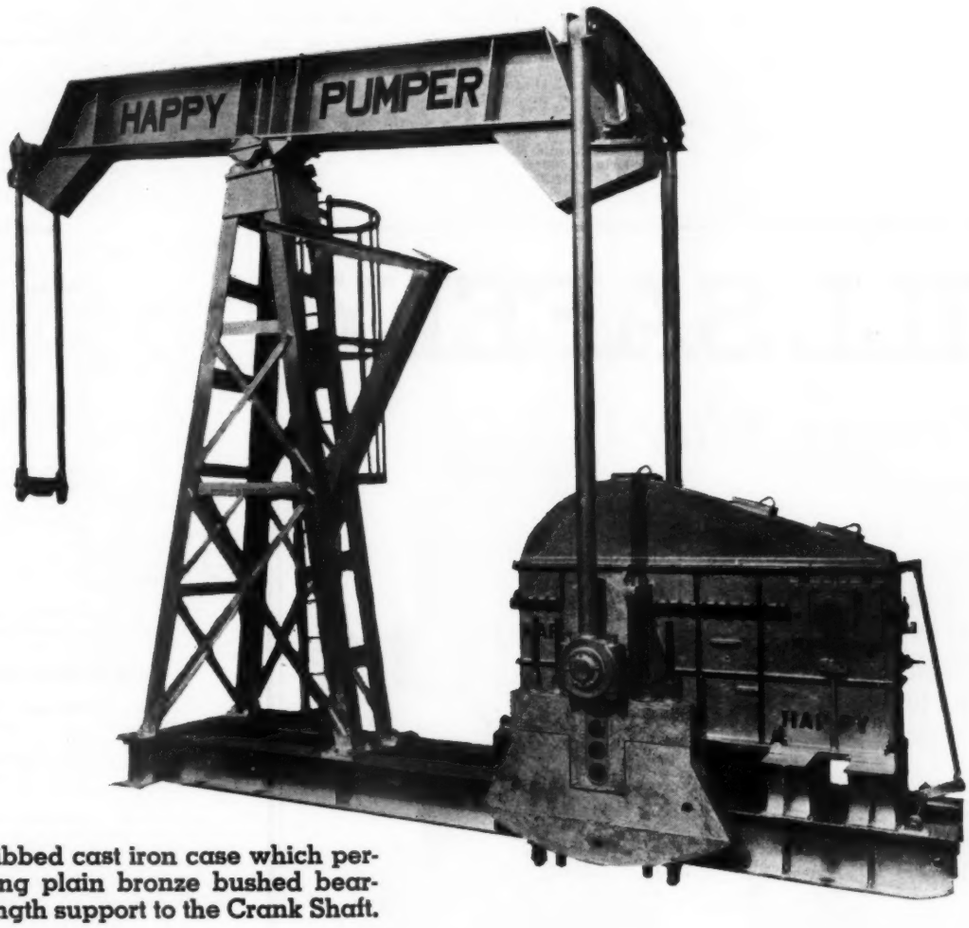
In Eddy County, Martin Yates, Jr. No. 1 Conlon, SW NW NW section 7-24-27, was dry of oil and abandoned at 2,370 feet when water intruded.

Lea County

Amerada Pet. Corp. No. 6 Byrd, SE sec. 12-20-36. Loc.
Amerada Pet. Corp. No. 3 Laughlin, C NW NE sec. 9-20-37. T.D. 2,855 ft.; set 8-in. 2,573 ft.
Amerada Pet. Corp. No. 1 State VA, C SE SW sec. 23-17-34. Drlg. 3,675 ft.
Amerada Pet. Corp. No. 1 State VB, C NE SW sec. 36-17-34. T.D. 265 ft. in new hole; rng. csg.
Anderson-Prichard Oil Corp. No. 1 Carlson, C SW NW sec. 21-25-37. O.W.D.D.; T.D. 3,020 ft.; F. 40 B.O.P.D.; C.O
Anderson-Prichard Oil Corp. No. 2 Jal, C NW NE sec. 8-25-37. Drlg. 3,445 ft.
Anderson-Prichard Oil Corp. No. 1 Wells, C SE SE sec. 5-27-37. Drlg. 3,610 ft.
Anderson-Prichard Oil Corp. No. 2 Langlie, SE sec. 8-25-37. Drlg. 3,420 ft.
Bradley Oil Co. No. 1 Downes, SE NE SE sec. 5-22-37. T.D. 1,870 ft.; S.D. repairs.
Cities Service Oil Co. No. 3-A Closson-A, C NE SE sec. 18-22-36. R.U.R.
Cities Service Oil Co. No. 1-H State, C NE NE sec. 17-22-36. T.D. 3,884 ft.; prep. to deepen.
Continental Oil Co. No. 3-B-6 Elliott, C SE SE sec. 6-22-37. T.D. 3,778 ft.; flows 25 B.O.P.D.; C.O.
Continental Oil Co. No. 1-A-31 Marsh, SE sec. 31-20-39. Wildcat; T.D. 4,346 ft.; C.O.
Continental Oil Co. No. 3-B-23 Reed, C E½ SE SE sec. 23-20-36. T.D. 2,736 ft.; tstg.
Continental Oil Co. No. 4-B-24 Reed, CEL NW SW sec. 24-20-36. Drlg. 2,497 ft.
Continental Oil Co. No. 8-A-14 Sanderson, NE NW SE sec. 14-20-36. Drlg. 3,655 ft.
Continental Oil Co. No. 1-F-1 State, C SW SW sec. 1-21-36. T.D. 3,847 ft.; C.O.
Continental Oil Co. No. 1-G-12 State, C SE SW sec. 12-18-35. T.D. 1,845 ft.; rng. csg.
Continental Oil Co. No. 1-H-35 State, C SE NE sec. 35-17-34. T.D. 1,535 ft.; set 7⅝-in. csg. 1,530 ft.
Cranfill & Germany No. 1 Weir, C NE NE sec. 15-20-37. T.D. 4,210 ft.; S.D.O.
Culbertson & Irwin No. 7-A Humphrey, NE SW SE sec. 3-25-37. Cellar and pits.
Culbertson & Irwin No. 1 Liberty Royalty, NW sec. 3-25-37. T.D. 3,169 ft.; S.D. repairs.
J. P. Cusack, Inc., No. 1 Turner, SW NE SE sec. 34-18-38. T.D. 4,090 ft.; set 7-in. 4,063 ft.
Danglade & Clower No. 1 Currie, NE NE SW sec. 6-21-37. Drlg. 1,605 ft.
Danglade & Clower No. 1 Glier, C SW NE sec. 32-22-37. T.D. 3,680 ft.; acd.
L. E. Elliott No. 2 Elliott, NE NW SE sec. 26-20-36. Drlg. 355 ft.
A. R. Eppenauer No. 1 Stuart, NW NE NE sec. 22-25-37. T.D. 2,817 ft.; drlg. by lost bit.
J. E. Farrell No. 2-C Walden, C SE SW sec. 15-22-37. Drlg. 3,700 ft.
Geo. F. Getty, Inc., No. 2-F State, C NW NE sec. 36-17-34. Drlg. 400 ft.
Geo. F. Getty, Inc., No. 1 Riggs, NW sec. 1-26-36. Wildcat; T.D. 3,358 ft.; P.B. 3,346 ft.; to test.
Gulf Oil Corp. No. 1 Alley, C NE SE sec. 10-23-37. Set 13-in. 293 ft.; T.D. 304 ft.
Gulf Oil Corp. No. 7-F Bell, C SW NW sec. 36-20-36. R.U.R.
Gulf Oil Corp. No. 1 Boyd, sec. 23-22-37. T.D. 3,681 ft.; testing.
Gulf Oil Corp. No. 3 Day, SE SE SW sec. 6-22-36. T.D. 3,835 ft.; rng. tbg.
Gulf Oil Corp. No. 1 Elliott, SW SE SE sec. 15-25-37. Drlg. 3,420 ft.
Gulf Oil Corp. No. 2-D Kutter, C SE SW sec. 8-19-37. T.D. 4,040 ft.; C.O.
Gulf Oil Corp. No. 4-C Kutter, C SW NW sec. 18-19-37. Drlg.
Gulf Oil Corp. No. 1-D Mattern, SW sec. 6-22-37. T.D. 3,795 ft.; P.B. 3,775 ft.; C.O.
Gulf Oil Corp. No. 3 McCormack, C SE SE sec. 32-21-37. T.D. 3,762 ft.; tstg.
Gulf Oil Corp. No. 4 McCormack, C SW SE sec. 32-21-37. Drlg.
Gulf Oil Corp. No. 1 LeMunyon, C NE NE sec. 28-23-37. Old well; T.D. 3,666 ft.; pmpd. 3 B.O.P.D.
Gulf Oil Corp. No. 2 Ramsey, C SW SW sec. 27-21-36. T.D. 3,895 ft.; S.D.O.
Gulf Oil Corp. No. 1 J. Whitten, SE SE SW sec. 33-23-36. Drlg. 800 ft.
Gulf Oil Corp. No. 1 Woolworth, C NE SE sec. 30-24-37. T.D. 3,803 ft.; P.B. 3,773 ft.; tstg.
Humble O. & R. Co. No. 4 Fopeano, C SE SE sec. 26-20-36. T.D. 3,710 ft.; waiting for csg.
Humble O. & R. Co. No. 2 Greenwood, C NE SW sec. 9-22-37. Drlg. 3,512 ft.
Humble O. & R. Co. No. 2-H State, C SE SW sec. 27-22-37. Drlg. 3,114 ft.
Humble O. & R. Co. No. 3 Williams, C SW NW sec. 34-24-37. T.D. 3,532 ft.
Inter-Coast Pet. Co. & J. C. Clower No. 1 State, SW cor. sec. 2-23-37. Drlg. 1,040 ft.
Jal Nat. Gas Corp. No. 2 Justis, NE sec. 20-25-37. T.D. 3,029 ft.; testing.
Kan-Mex Corp. No. 2-B-3 Vaughn, NW cor. sec. 3-24-36. T.D. 3,615 ft.; to drill plug.
Carl B. King No. 1-A Stuart, NW NE NW sec. 14-25-37. T.D. 3,395 ft.; S.O.&G.; rng. tbg.
Magnolia Pet. Co. No. 1 Brunson-Argo, C NW NE sec. 9-22-37. Drlg. 810 ft.
Magnolia Pet. Co. No. 1 State G, NW NW NE sec. 34-17-34. T.D. 4,905 ft.; P.B. 4,794 ft.
Magnolia Pet. Co. No. 1-J State, C NE SE sec. 22-17-34. Drlg. 3,815 ft.
Magnolia Pet. Co. No. 1-K State, C NW SE sec. 31-17-35. Drlg. 3,570 ft.
Magnolia Pet. Co. No. 2 State-Bridges, sec. 14-17-34. T.D. 4,593 ft.; flwd. 51 B.O. in 1 hr., naturally.
Magnolia Pet. Co. No. 3 State-Bridges, C NE NW sec. 26-17-34. Drlg. 2,115 ft.
Magnolia Pet. Co. No. 4 State-Bridges, C NW NE sec. 26-17-34. Drlg. 2,180 ft.
J. A. Mascho No. 1 Cloyd, C SE SE sec. 20-22-23. Wildcat; drlg. 3,125 ft.
C. T. McLaughlin No. 1 Polhamus, NE sec. 9-24-37. T.D. 3,672 ft.; drlg. plug.
National Drlg. & Prod. Co. No. 1 Flint, C NE NE sec. 29-20-34. Wildcat; drlg. 3,695 ft.
Ohio Oil Co. No. 1 Kutter D, C SW SW sec. 18-19-37. Drlg. 3,590 ft.
Ohio Oil Co. No. 7 State-McDonald, C SW SE sec. 16-22-36. T.D. 3,871 ft.; C.O.
Ohio Oil Co. No. 10 State-McDonald, C NE SW sec. 16-22-36. Loc.
Ohio Oil Co. No. 1 State-Staplin, C SE SW sec. 30-17-35. Drlg. 3,152 ft.
Parker Drlg. Co. No. 1 Irwin, C W½ SW SW sec. 35-24-37. T.D. 3,343 ft.; est. 3,000,000 ft. gas.
Phillips Pet. Co. and Pure Oil Co. No. 1 Woolworth, C SE NE sec. 33-24-37. Drlg. 3,360 ft.
Phillips Pet. Co. No. 2 New, CEL SE NE sec. 26-20-36. Drlg. 1,685 ft.
Phillips Pet. Co. No. 2 Santa Fe, C SW SE sec. 30-17-35. T.D. 4,110 ft.; set 7-in. 4,104 ft.
Phillips Pet. Co. No. 1 Santa Fe, C SW NW sec. 31-17-35. T.D. 4,260 ft.; fsg.
Plains Prod. Co. No. 1 Humphreys, NE sec. 3-25-37. Loc.
Repollo Oil Co. No. 4 Moseley, SW SE NE sec. 34-24-37. Drlg. 2,125 ft.
Repollo Oil Co. No. 1 State, SE cor. sec. 6-17-34. Drlg. 308 ft.
Repollo Oil Co. No. 3-C Stuart, SE NE SW sec. 20-25-27. O.W.D.D.; C.O. 3,360 ft.; F.&S. 100 B.O.P.D.
Repollo Oil Co. No. 3-B Whitten, NE SE NE sec. 4-24-36. T.D. 315 ft.; set 12½-in. 266 ft.
Shasta Oil Co. No. 2 Woolworth, NE NW NW sec. 28-24-37. Drlg. 2,330 ft.
Shell Pet. Corp. No. 1-A State, C NW SE sec. 16-23-36. T.D. 3,700 ft.; tstg.
Shell Pet. Corp. No. 1-A State, NE cor. sec. 33-18-36. T.D. 3,470 ft.; S.D.O.
Shell Pet. Corp. No. 1-A State, C NW NE sec. 31-17-35. Drlg. 2,250 ft.
Shell Pet. Corp. No. 4-E State, C SW NW sec. 12-20-36. Drlg. 3,800 ft.
Shell Pet. Corp. No. 1 J. L. Whitten, NE SW SE sec. 33-23-36. Drlg. 3,704 ft.
Sindorf et al No. 1 Glier, NE cor. sec. 33-22-37. Drlg. 3,560 ft.
Skelly Oil Co. No. 5 J. B. Baker, C SE NW sec. 27-22-37. T.D. 3,620 ft.; testing.
Skelly Oil Co. No. 2 Hill, C NW NE sec. 6-21-37. Drlg. 3,630 ft.
Skelly Oil Co. No. 3 G. W. Sims, C NW NE sec. 9-23-37. T.D. 3,642 ft.; C.O.
Skelly Oil Co. No. 1-C R. R. Sims, sec. 3-23-37. Drlg. 3,688 ft.
Skelly Oil Co. No. 1-E W. P. Sims, C NW NE sec. 10-23-37. T.D. 3,625 ft.; flwd. 452 bbls. in 24 hrs.
Skelly Oil Co. No. 1-K State, NE NE NW sec. 32-21-37. T.D. 3,500 ft.; set 7-in. csg.
Skelly Oil Co. No. 1 Toby, C SW SW sec. 7-24-37. Cg. 3,389 ft.
Stanolind O. & G. Co. No. 14-A Gilluly, C SW NW sec. 24-20-36. Drlg. 313 ft.
Stanolind O. & G. Co. No. 2-A Hill, C NE SE sec. 6-21-37. Loc.
Stanolind O. & G. Co. No. 2-C Hill, C SW NW sec. 5-21-37. Drlg. 3,600 ft.
Stanolind O. & G. Co. No. 3-C Hill, C NW NW sec. 5-21-37. Drlg. 1,020 ft.
Stanolind O. & G. Co. No. 4-B Myers, C SW NW sec. 21-24-37. Drlg. 3,616 ft.
W. H. Street No. 4 Woods, C NE NE sec. 22-22-37. Loc.
Sun Oil Co. No. 4 Stuart, C SE NE sec. 15-25-37. T.D. 3,364 ft.; testing.
Texas Co. No. 1 Corbin, C NW SW sec. 19-18-33. Drlg. 4,650 ft.
Texas Co. No. 3 Falby, C NE SW sec. 8-22-37. T.D. 3,500 ft.; set 7-in. csg.
Texas Co. No. 3 Fristoe, NW SE NE sec. 3-25-37. T.D. 3,372 ft.; fsg.

THE Happy Pumper

T-100 SERIES



Note the heavily ribbed cast iron case which permits the use of long plain bronze bushed bearings, giving full length support to the Crank Shaft.

- Chain Reduction Drive.
- Ratio 7 to 1.
- High Speed Shaft equipped with Timken Bearings.
- Chain adjustment, positive and accurate.
- 30 H.P. 40 H.P. 50 H.P.

  Interchangeable on same foundation and in same case.

Now on display at Tulsa and Seminole, Oklahoma, and Ellinwood, Kansas.

IMMEDIATE DELIVERY

On 30 H.P. 40 H.P. 50 H.P.

We would appreciate furnishing you more detailed Specifications and Prices on request.

HAPPY PUMPERS *Make Pumpers Happy!*

See Our Exhibit
INTERNATIONAL PETROLEUM EXPOSITION
TULSA
MAY. 14-21

EIGHTEEN YEARS OF LEADERSHIP

HAPPY BELTING CO. HBCo TULSA OKLA.

Happy BELTING COMPANY

310 EAST TENTH STREET, Tulsa, Oklahoma

BRANCHES: Seminole, Oklahoma City, Oklahoma. Ellinwood, Wichita, Kansas. Kilgore, Odessa, Pampa, Texas. El Dorado, Arkansas

Texas Co. No. 1-N State, C SW SW sec. 30-17-35. Drk.
Texas Co. No. 1-O State, C SW NW sec. 36-17-34. R.U.R.
Texas Pacific C. & O. Co. No. 9-A State, Acct. 2, NW SW NE sec. 7-22-36. T.D. 3,825 ft.; S.D.
Texas Pacific C. & O. Co. No. 10-A State, Acct. 2, C SE NE sec. 7-22-36. M.I.M.
Texas Pacific C. & O. Co. No. 11 State, C W half SW SW sec. 8-22-36. M.I. rotary.
Two States Oil Co. No. 1 Etcheverry, SE SW NE sec. 10-20-36. Drlg. 2,400 ft.
Ted Weiner No. 1 Smith, NE cor. sec. 4-25-37. Drk.
Western Gas Co. No. 1 Davis, C SW SE sec. 33-23-37. T.D. 3,600 ft.; set 5½-in. 3,375 ft.

Eddy County

F. E. Baker No. 1 Eddy, NE sec. 12-22-27. T.D. 2,117 ft.; S.D.O.
Barnett Oil Dev. Co. No. 1 King Permit, C NW SE sec. 23-26-30. T.D. 980 ft.; set 12½-in. csg. 974 ft.
Carper Drlg. Co. No. 3 Gissler, C E½ E½ NW sec. 23-17-30. Drlg. 2,135 ft.
Danciger O. & R. Co. No. 4-A Turner, C SW SW sec. 18-17-31. T.D. 507 ft.; rng. csg.
Danciger O. & R. Co. No. 1-B Turner, CEL NE SE sec. 17-17-31. Loc.
D. & B. Oil Co. No. 2 Jenkins, SW NW NW sec. 20-17-30. T.D. 3,265 ft.; acd.; rng. tbg.
D. & B. Oil Co. No. 3 Jenkins, NE NE NW sec. 20-17-30. Loc.
Emperor Oil Co. No. 4 Puckett, C NE NE sec. 24-17-31. T.D. 3,400 ft.; rng. csg.
Emperor Oil Co. No. 5 Puckett, C SW NE sec. 24-17-31. Drlg. 3,020 ft.
Finley & Cherry No. 1 Buchley, C NW NW sec. 28-16-31. Wildcat; T.D. 3,750 ft.; S.D.
Flint Prod. Co. No. 1-B State, SE sec. 20-17-30. Drlg. 3,830 ft.
C. I. Frederick No. 1 Reed, C NE SW sec. 28-24-28. Drlg. 1,802 ft.
F. W. & Y. Oil Co. No. 8-A Gissler, NE NW NE sec. 23-17-30. Drlg. 2,770 ft.
F. W. & Y. Oil Co. No. 9-A Gissler, C SE NE sec. 14-17-30. Drlg. 1,800 ft.
F. W. & Y. Oil Co. No. 1-B Gissler, SW sec. 14-17-30. Drlg. 3,142 ft.
F. W. & Y. Oil Co. No. 2-B Gissler, C NW NW sec. 24-17-30. T.D. 3,505 ft.; S.&F. 135 B.O.P.D.; C.O.
F. W. & Y. Oil Co. No. 3 Jackson, C NW SE sec. 13-17-30. T.D. 2,953 ft.; fsg.
Grayburg Oil Co. No. 11 Burch, NE NE SE sec. 19-17-30. Drlg. 2,112 ft.
Grayburg Oil Co. No. 4 Keely, SE SW NE sec. 24-17-9. T.D. 3,588 ft.; to test.
H. A. Hartwell No. 1 Vandagrift, NE NE SE sec. 8-18-27. Drlg. 1,755 ft.
R. L. Holcomb No. 1 State, NW sec. 22-17-28. T.D. 1,971 ft.; testing.
C. F. Ingram No. 1 Page, NE NE SW sec. 15-21-28. T.D. 1,495 ft.; S.D. for new rig.
B. M. Koehane et al No. 1 Shannon, SE cor. sec. 27-16-31. Drlg. 3,120 ft.
Paul Moran No. 1 Crawford & Smith, NW NW SW sec. 24-24-26. T.D. 842 ft.; S.D.
Murchison & Closuit No. 1 Foster, SE NE SE sec. 17-17-31. Drlg. 1,505 ft.
Murchison & Closuit No. 2-A State, NW SE SW sec. 16-17-31. Drlg. 3,000 ft.
Pecos Valley Gas Co. No. 1 Sappenfield, C SE SE sec. 4-16-28. Drlg. 1,090 ft.
Premier Pet. Co. No. 1 Beeson, NE SE SE sec. 28-17-30. Drlg. 1,150 ft.
Red Gulch Oil Co. No. 2 Keyes, C SW SE sec. 4-17-28. Drlg. 675 ft.
Repollo Oil Co. No. 2-C McIntyre, NE cor. sec. 20-17-30. Drlg. 310 ft.
Repello Oil Co. No. 4-D McIntyre, NW NE NE sec. 21-17-30. Drlg. 2,946 ft.
Repollo Oil Co. No. 2-A Parke, NW NW NE sec. 22-17-30. Drlg. 2,356 ft.
Repollo Oil Co. No. 1-B Parke, SW cor. sec. 15-17-30. Drlg. 2,882 ft.
Paul Sargent No. 1 State, NE sec. 16-17-31. T.D. 3,749 ft.; P.B. 3,745 ft.; tstg.
R. A. Shugart No. 1 Coulthard, C NW SW sec. 35-18-31. T.D. 4,088 ft.; P.B. 3,970 ft.; to shoot.
W. K. Royalty No. 2 State, C NW NE sec. 16-17-31. Drlg. 2,740 ft.
W. O. Snyder No. 1 Pecos Irrigation, C NE SE sec. 15-25-28. Drlg. 3,276 ft.
Western Gas Co. No. 1 Matkins, C SE SE sec. 15-23-36. M.I.M.
Western Drlg. Co. No. 1-A Western, SE SW NW sec. 23-17-29. Cellar and pits.
Neil Wills No. 2-A State, CEL SE NE sec. 19-20-30. Drlg. 1,142 ft.

Chaves County

E. J. Fisher No. 1 Etz Permit, NE sec. 23-7s-26. T.D. 1,510 ft.; rng. csg.
Grastorf & Caudill No. 1 Smith, C NE NE sec. 1-4s-29. Wildcat; drlg. 660 ft.
J. & L. Drlg. Co. No. 2 Hurd, SW sec. 11-11-26. Drlg. 755 ft.

Curry County

Bond & Harrison No. 1 Hart Ranch, C NW SE sec. 13-2n-31. T.D. 3,258 ft.; S.D.O.

De Baca County

Land Owners Oil Co. No. 1 McAdoo, SW cor. sec. 16-1s-7e. O.W. prep. to deepen from 5,850 ft.; S.D.
James D. Ward No. 1 Summers, NW NE SW sec. 17-4n-20. T.D. 260 ft.; S.D.
N. F. Woods No. 1 Jones, C NE SW sec. 17-4n-20. T.D. 25 ft.; S.D.

Dona Ana County

Jules C. Bertrand No. 1 Casad Permit, sec. 24-26-5e. T.D. 47 ft.; S.D.O.

McKinley County

S. Dysart No. 1 Govt., NE sec. 14-14-10w. T.D. 1,390 ft.; fsg.

Otero County

Fred Turner, Jr., No. 1 Ella Everett, C SE SE sec. 34-22-13. Drlg. 3,000 ft.
Fred Turner, Jr., No. 1 H. V. Everett, SE SE sec. 28-22-13. Drlg. 1,700 ft.

Roosevelt County

C. S. Peterson and Conquistadores Oil Co. No. 1 Good, NW SE SE sec. 28-5s-30. Drlg. 470 ft.

NORTHWEST NEW MEXICO

McKinley County

Claude Walker No. 6 fee, SE SW SE sec. 20-20n-9w. Drlg. 350 ft.

San Juan County

Continental Oil Co. No. 72 Rattlesnake, NE SW NE sec. 2-29n-19w. Drlg. 325 ft. (first report).

Socorro County

Central New Mex. Oil Co. No. 1 Belen Ld. Grant, NW sec. 16-3n-1e. S.D. 2,700 ft. for csg.

Torrance County

Chief O. & G. Co. No. 1 Pace, SE sec. 12-6n-7e. T.D. 1,830 ft.; est. 1,000,000 ft. at 1,740 ft.

COLORADO

Archuleta County

Pagosa Oil & Dev. Co. No. 1 Macht, S sec. 32-36n-1w. Resumed at 328 ft. where it S.D. last December after landing 12½-in. on bttm.

Cheyenne County

The Gulf Oil Corp. No. 1 Union Pacific-Larsen, which stopped to test at 4,813 feet, is still fishing with rotary tools for part of a packer which was lost while attempting to acidize. When the packer is removed it is planned to rig up cable tools, drill through the lime horizon in which it is now bottomed, acidize and test again. It then probably will go deeper with cable tools before resuming with rotary.

Fremont County

Isadore Spangler No. 1 St. Mary's, SE SE SE sec. 2-19s-70w. Drlg. 300 ft.; 8¼-in. at 245 ft.

WYOMING

Albany County

Wyco Oil Co., Inc., No. 3 Chappel, NE NE NW sec. 33-21n-76w. T.D. 2,546 ft.; tstg.

Big Horn County

Prescott & Mileski No. 1 Govt., NE NW SW sec. 1-51n-93w. Drlg. 290 ft.; 12½-in. at 79 ft.
Clifford S. Johnson No. 1 Johnson, CEL NW NW sec. 24-51n-93w. Drlg. 219 ft.
Joan Oil Co. No. 1 Howell, NE NW NE sec. 32-55n-97w. Drlg. 2,340 ft.

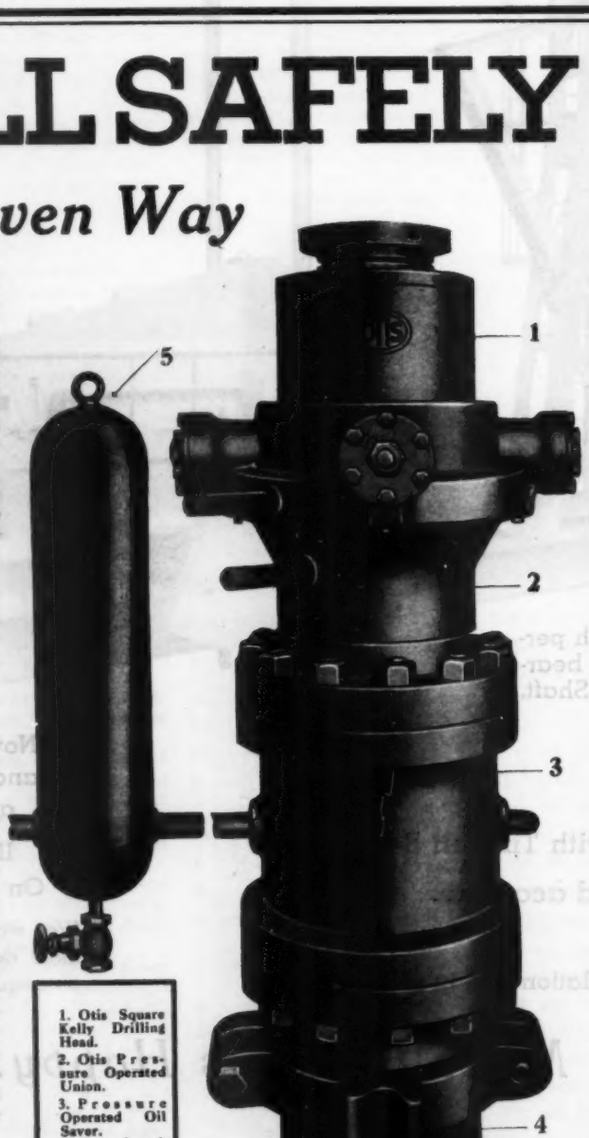
Carbon County

The Ohio Oil Co. and the California Co. have a good completion in their No. 4-A Kyle, near C NE NE section 26-21n-79w, in the Big Medicine Bow field. It is located 989 feet north and 318 feet west of the discov-

DRILL SAFELY

This Proven Way

OPERATORS EVERYWHERE RECOGNIZE THE OTIS SQUARE KELLY DRILLING HEAD AND PRESSURE CONTROL DRILLING EQUIPMENT AS A TROUBLE AND MONEY SAVER PLUS THE SAFETY THEY ASSURE THE USER



1. Otis Square Kelly Drilling Head.
2. Otis Pressure Operated Union.
3. Pressure Operated Oil Saver.
4. Quick Union.
5. Surge Chamber, located on the derrick floor.

This Otis Safety Hook-up is doing three important jobs, any one of which is definitely profitable to the user. It provides for drilling in or cleaning out with oil. It serves as a blowout preventer. It permits the carrying of excess pressure on the mud column. With it the operator is allowed to use the conventional square Kelly joint with either outside coupled (tool joint), or flush joint drill pipe. It allows full free travel of the Kelly, using regular square Kelly joint and rotary table drive bushings. There are no friction driving elements to slip and mar the drill pipe, no bushings to raise and lower with every few feet of hole drilled. In fact, drilling proceeds almost exactly in the same manner as though it were not being done under pressure control.

This hook-up has been proven in all important U.S. drilling areas, and we refer you to any user.

OTIS PRESSURE CONTROL, INC.

Headquarters: DALLAS, TEXAS

BRANCHES: Houston, Wichita Falls and Kermit, Texas; Oklahoma City and Ada, Okla.; Hobbs, New Mexico; Rodessa, Louisiana; Wellsville, N. Y.; and Glendale, Calif.

"Don't Kill Your Well" Call OTIS

ery well, which was completed in 1935 for 6,360 bbls. and 81,000,000 feet of gas in the first and second Sundance sands at 5,393 feet. No. 4-A Kyle was completed at a total depth of 5,464 feet and the 7-inch was cemented at 5,401 feet. It is producing from the second Sundance sand only and on a six-hour test averaged 70 bbls. an hour with a gas-oil ratio of 94 feet of gas to 1 bbl. of oil. The first Sundance at 5,285-5,337 feet had gas only and was cased off.

Italo Pet. Co. No. 1 Tunney-Bragg, NE SE NW sec. 11-26n-81w. Drlg. 1,403 ft.
Sinclair-Wyoming Oil Co. No. 12-B Wertz, SE NW NW sec. 7-26-89w. Drlg. r.b. at 5,507 ft.
Ohio Oil Co. No. 14 H.&C., SE NW SW sec. 35-20n-78w. Drlg. 2,714 ft.

Converse County

Sand Creek Oil Co. No. 1, C SE SE sec. 29-32n-69w. Drlg. 600 ft.; 8¼-in. at 348 ft. (first report).
Ainsworth Oil Co. No. 1 Marberger, NE SE NE sec. 34-32n-69w. Cmtd. 6¼-in. at 784 ft.
Chadron-Osage Oil Co. No. 1 State, SW SW SW sec. 16-32n-69w. Res. at 4,060 ft.
Wyshawn Oil Co. No. 1 Lindley, NW SE sec. 34-32n-69w. Drlg. 500 ft.; under contr. to go to 2,000 ft.

Fremont County

Sinclair-Wyoming Oil Co. No. 2-B Muskrat, NW NW NE sec. 4-33n-92w. Drlg. 4,358 ft.
Stanolind O. & G. Co. No. 1 Govt., C SE SE sec. 3-33n-96w. Cg. sdy. sh. in Dakota at 8,171 ft.; top Muddy 7,939 ft.; S.G.; not tstd.
Consolidated Oil Properties No. 3 Ewart, C SW SE sec. 16-1n-14w. T.D. 700 ft.; rng. form. test.
H. Kenyon Burch No. 9 Govt., C NW NW sec. 27-3n-1w. Drlg. 239 ft. (Pilot Butte, first report).

Hot Springs County

Delaware Oil Co. No. 1 Govt.-Skelton, C SE SE sec. 2-43n-96w. Lost hole at 400 ft.; skd. rig; drlg. 200 ft. new hole.
California Exploration Co. et al No. 1 Govt., NE SE NE sec. 12-44n-97w. Drlg. lead-wool plug at 3,807 ft.; to D.D.
J. W. Bales No. 1 Govt., CWL SE SW sec. 28-43n-93w. T.D. 1,082 ft.; prep. to acid.; S.O. in Madison at 902-1,025 ft.

Natrona County

General Petroleum Corp. No. 1 Government, test on Cole Creek, is bottomed at 6,840 feet and testing the first Wall Creek. After setting the 8⅝-inch at 6,680 feet, hole was swabbed down and drilling mud filled up about 1,500 feet. No oil was showing, but there were no evidence of water in the sand. Circulation was lost while swabbing and attempts to make a well at this horizon will continue before drilling deeper.

General Pet. Corp. No. 1 Govt., C NW SE sec. 21-35n-77w. T.D. 6,840 ft.; tstg.

Niobrara County

The Lance Creek field had a lively week with three completions and four new operations. All of the producers are in the Minnelusa formation and outside the productive area of the Sundance sand.

On the southwestern side of the field C. L. Price No. 1 Lamb, NE NW NW section 7-35n-65w, operating for the Nebraska-Wyoming Oil Co., marked an extension of the Minnelusa pool one-fourth of a mile to the west. It was completed at 5,401 feet with the 7-inch at 5,382 feet, on top of the Leo sand and hole bottomed 13 feet in the pay. It flowed 40 bbls. an hour on a three-hour test. It was increasing when shut in. Later it was tested for 15 hours and averaged 63 bbls. an hour. Rotary table elevation is 4,446 feet. It is one-fourth of a mile west of the MacKinnie Oil & Drilling Co. No. 2 Thompson, the nearest producer, which averaged 62 bbls. an hour at 5,294 feet, 23 feet in the Leo sand. The Price interests are preparing to drill another well on the Lamb tract.

The Continental Oil Co. No. 3 Apex-1, SE SE NE section 34-36n-65w, on the east side of the field and 4 miles from the Price well, was completed as one of the best producers so far drilled in the Pennsylvanian. It is an offset on the northwest to the Ohio Oil Co. No. 5 Leo, the discovery well in the Leo, or second sand in the Minnelusa, which was completed last year at 5,625 feet for 1,800 bbls. per day. The Apex well, which was drilled for the account of the Buck Creek Oil Co., was completed at 5,496 feet, with the 7-inch on top of the sand at 5,441 feet. It made 2,402 bbls. in 24 hours through the tubing and was increasing at the end of the period, making 110 bbls. the last hour. The Leo sand was at 5,440-44 feet. Elevation is 4,476 feet.

The third completion was the Argo Oil Co. No. 6 Ford, NW SW NW section 33-36n-65w, in the northern part of the field and an outside well. It had the top of the Leo at 5,292 feet and was saturated to 5,312 feet. It made 1,680 bbls. on a 24-hour test. Total depth is 5,330 feet and rotary table elevation 4,404 feet.

Location for an important test was made in Hewitt Brothers and J. E. Manning No. 1 Elsie Pecklow, SE SE SE section 1-35n-66w, an outside well on the southwestern side, an offset on the west to Price No. 1 Lamb. The MacKinnie Oil & Drilling Co. No. 4 Thompson, C NE NW section 7-35n-65w, is an east offset to No. 1 Lamb and a west offset to their No. 2 Thompson. The Continental Oil Co. No. 11 Tom Bell Cattle, SE SW SW section 27-36n-65w, is in the northern part of the field and southwest offset to the Minnelusa Oil Co. No. 1-A Lamb, a recent completion which extended the pool on the north. The Minnelusa Oil Co. No. 2 H. & M., NW NE NE section 8, is an outside location on the southeast.

Minnelusa Oil Co. No. 2 H. & M., NW NE NE sec. 8-35n-65w. M.I. rot. (first report).
Continental Oil Co. No. 11 Tom Bell Cattle, SE SW SW sec. 27-36n-65w. R.U.R. (first report).
MacKinnie Oil & Drlg. Co. No. 4 Thompson, C NE NW sec. 7-35n-65w. M.I. rot. (first report).
Hewitt Bros. and Manning No. 1 Pecklow, SE SE SE sec. 1-35n-66w. M.I. rot. (first report).
Continental Oil Co. No. 5 Joss, SW SW NE sec. 6-35n-65w. Drlg. 750 ft.; 13⅜-in. at 340 ft.
Ohio Oil Co. No. 10 Putnam, NW SE NW sec. 4-35n-65w. Cmtd. 13⅜-in. at 297 ft.; W.O.C.
Argo Oil Co. No. 5 Ford, C SW SE sec. 33-36n-65w. Cmtd. 13⅜-in. at 210 ft.; W.O.C.
H. D. Moore et al No. 1 Beregren, NW sec. 23-35n-63w. Drlg. 636 ft. in variegated sh.; (formerly W. A. Maupin et al).
Continental Oil Co. No. 3-A Diehlman, SE SE SW sec. 5-35n-65w. Cg. 4,738 ft. in Minnekhata.

Park County

Paul Stock, who recently acquired a large block on the Shoshone, or Cody, anticline, including a well drilled in 1930 to 2,015 feet by the Lenco Petroleum Co., is building steel derrick and moving in rotary to take the old well down to Tensleep and possibly the Madison.

Paul Stock No. 1 Govt., SE SE NE sec. 20-53n-101. R.U.R. to deepen; O.W.D.D. from 2,015 ft.
Ohio Oil Co. No. 4 Mack-O.P.C.-4, SE SW SE sec. 30-58n-99w. T.D. 3,092 ft.; P.B. to 2,850 ft.; cmtd. 8⅝-in. at 2,790 ft.; tstg.
Resolute Oil Co. No. 4 N. P., C NE NW sec. 21-57n-101. Shot 40 qts. at 8,625-54 ft. in Frontier; C.O.; S.G., no oil.
Resolute Oil Co. No. 3 N. P., C NE NE sec. 20-57n-

✓ NEWS of the new magnet metal— ALNICO
✓ NEWS of a new magneto made possible by the use of this metal— AMERICAN-BOSCH SUPER-POWERED MAGNETO.
✓ NEWS of its new design ...fewer rotating parts. And these parts last much longer, cost much less when replacements are needed.
✓ NEWS of a new low in magneto upkeep costs —50% lower than ever before.
GOOD NEWS!
Pedigreed POWER
AMERICAN BOSCH MAGNETO
✓ NEWS of new dependability in ignition—at much lower cost.
Get all the news about the use of the new American-Bosch Magneto on compressors, drills, pumps and all power plants. Specify American-Bosch.—United American Bosch Corp., Springfield, Mass.
AMERICAN-BOSCH
Super POWERED MAGNETO

● The answer is easy when you drill with a Quintuplex, for this complete control instrument keeps a *continuous* 24-hour written record of all the important drilling functions.

Weight on bottom — torque on drill pipe — mud pump pressure — how long in the hole — how long on top — how much drilling time between connections . . . these are the important drilling facts you'll want to remember for future guidance. And these are the very facts that Quintuplex won't let you forget, for it writes them down the instant they occur!

But that's not all! Quintuplex also centralizes the five important drilling gauges — weight indicator, supersensitive weight indicator, torque, mud pressure, and rotary table r.p.m. — right under the driller's eyes where they're easy to watch and easy to read, yet not in the way.

If you're interested in greater drilling efficiency, look into the Quintuplex. There's an interesting booklet ready for you that fully describes this modern instrument. Write for it today!

DO YOU KNOW?

If other items were taxed in proportion to gasoline, the tax on an ordinary home would amount to $4,000.

THE WEIGHT INDICATOR

MARTIN-DECKER CORPORATION

LONG BEACH CALIFORNIA

San Joaquin Valley: A. F. McQUISTON, Bakersfield, California
Mid-Continent Distributor: REED ROLLER BIT COMPANY, Houston, Texas

150 H. P.

Westinghouse Natural Gas

ENGINE FOR SALE

In A-1 Condition

Payment not required until set and running to your satisfaction. Reason for selling is that our gas well is exhausted.

Address all communications to

H. V. Cross Alfalfa Milling Co.

Huntsville, Ohio

101w. Pmpd. 7 to 8 B.P.D. at 8,670 ft.; not officially comp.

Sweetwater County

Sinclair-Wyoming Oil Co. No. 78, SW SW NW sec. 11-26n-90w. Drlg. 596 ft.
Selegna Oil Co. No. 1 Union Pacific, SW SW sec. 11-20n-104w. T.D. 3,870 ft.; tstg. O.&G. sat. in Dakota at 3,842-54 ft.

Weston County

Chas. F. Martens No. 8, SE SE NW sec. 24-46n-64w. S.D. 1,000 ft.; repairs.
Chas. Stough No. 10, SE SW NW sec. 4-46n-63w. Cased off S.O.&G. at 157 ft. and drlg. ahead.
Patterson Oil Co. No. 19, CSL SE SE sec. 17-46n-63w. Drlg. 225 ft.; commercial show at 152-225 ft.
John Brorphy No. 1 George, SW SE NW sec. 12-48n-64w. S.O.W. in Upper Minnelusa with csg. at 1,964 ft.; drlg. ahead.

Washakie County

Bruce C. Teeter No. 1 Government, CEL NE SE section 25-48n-91w, Hidden dome area, pas plugged and abandoned at 1,710 feet.

MONTANA

Big Horn County

Two small gas wells were completed in the Hardin gas field, both being in the third addition to the town of Hardin. A. M. Grilley No. 1 fee, Lot 4, Block 4, was completed at 698 feet for 50,000 feet a day, and Stanley A. Yergey No. 1 fee, was completed for 50,000 feet at 698 feet. The gas is used for domestic purposes by the producers.

P. O. Oil & Gas Co. No. 1, NW NE NE sec. 25-9s-35e. Drlg. 340 ft.
E. L. Dana No. 1 Hardy, SW NW sec. 22-9s-35e. S.D. 700 ft.

Carbon County

R. C. Tarrant No. 1, 500 ft. W of C sec. 3-6s-18e. R.U.
R. C. Tarrant No. 2 Heare, NW SE NW sec. 14-6s-19e. T.D. 1,705 ft.; cmtd. cave at 1,300 ft.
Sha-Wa Pet. Co. No. 1 Govt., SW SW NE sec. 35-9s-23e. T.D. 3,223 ft.; P.B. to 3,060 ft.; W.O.C.
Miracle Oil Co. No. 2 Govt., CWL NE SE sec. 3-6s-23e. Drlg. 2,371 ft.; 5½-in. at 2,360 ft.

Fergus County

Judith Operating Co. No. 1 Scharf, CWL NW NE section 35-22n-17e, Winifred district, which has been shut down at 3,180 feet since last fall, has been abandoned at that depth.

Glacier County

Texas Co. No. 1 Lindquist, C SE SE sec. 17-32n-5w. Drlg. 1,665 ft.
Glacier Prod. Co. No. 1 McNamer, CEL SE NE sec. 15-36n-5w. Drlg. 2,370 ft.
Santa Rita O. & G. Co. No. 8 Tribal, C NE SW sec. 16-35n-6w. Drlg. 2,450 ft.
A. B. Cobb No. 1 State, C NE NE sec. 30-37n-4w. T.D. 2,592 ft.; S.D. until spring.
Santa Rita O. & G. Co. No. 3 Govt., C SW SW sec. 4-32n-5w. Drlg. 625 ft.

Hill County

Burton & Hole No. 1 Waldrip, C SW NW sec. 12-32n-17e. Drlg. 600 ft. in Claggett.

Judith Basin County

Fletcher E. Hunt No. 3, NW SE NE sec. 30-14n-15e. Drlg. 1,810 ft.

Lewis and Clark County

Lewis & Clark Oil Synd. No. 1 Heilman, NW NW SW sec. 11-18n-5w. Drlg. 2,350 ft.

Park County

Ben W. Ryan No. 1 Burgee, SE SW NW sec. 28-2s-11e. Res. at 1,250 ft.

Toole County

Relief was promised the producers in the west end of the Kevin-Sunburst field this week when the International Refining Co. announced that it would take oil from wells in that district which have been shut in for lack of pipe line connections for some time. The company will prorate its purchases at 40 per cent. The Illinois Pipe Line Co. will lay connections to 20 wells as a result of this announcement.

One well was completed in the Gunderson pool on the west side of the field in the Big West Oil Co. No. 6 Gunderson, NE NW NW section 19-35n-2w. It had the Ellis at 1,638-42 feet in which there was a good show of oil. After acidizing with 500 gallons, it is producing 20 bbls. a day.

Chas. Grant et al No. 1 Anderson, SE NE NE sec. 26-35n-4w. T.D. 1,980 ft.; rng. csg.
R. G. Parrent No. 1 Anderson, C SW SE sec. 26-35n-4w. T.D. 1,650 ft.; fsg.
B. A. S. Arnow No. 1 Govt., SE SE SW sec. 18-35n-2w. S.D. 1,644 ft.
Superior Pet. Co. No. 7-A, NE NW NW sec. 12-35n-3w. Skdg. rig from No. 7.
West Kevin Community Lease, Inc., No. 1 McClary, SW NE NW sec. 3-34n-4w. Drlg. 1,350 ft.

Yellowstone County

Broadview Dome Oil Co. No. 1 Stallinberger, NE NE SW sec. 18-3n-23e. Cg. 4,561 ft. in Madison.
Riverton Oil Co. No. 1 Fox, CEL NW NE sec. 14-2n-23e. T.D. 1,795 ft.; cmtd. 8¼-in. on bttm.; W.O.C.

UTAH

Grand County

Utah Southern Oil Co. No. 1 Hyde, SE NW NW sec. 33-22s-22e. T.D. 6,715 ft.
Columbia Crude Corp. No. 1 Rath, NW SW SE sec. 12-25s-20e. Drlg. 3,390 ft. in hd. salt.
Cane Creek Oil Co. No. 1 Govt., NW SW sec. 31-26n-21e. Drlg. below 1,000 ft.

Summit County

Longwell Pet. Co. No. 1, SE SW SE sec. 35-3n-5e. Drlg. 2,650 ft.

Central West Fields

(Continued from Page 78)

In Muhlenberg County, Bremen district, Peerless Oil Co. No. 1 C. C. Gossett, deep test, is drilling at 800 feet. In the Paradise district, South Penn Oil Co. No. 2 Rogers Crescent Coal Co., deep test, was fishing at 1,800 feet.

In Ohio County, Adaburg district, Nollem Oil & Gas Co. No. 4 Vincent Crowe produced 12 bbls. a day from Jett sand at 603-31½ feet; shot with 80 quarts. Rex-Pyramid Oil Co. No. 4 P. R. Wells is a dry hole at 627 feet. In the Friendship Church district, A. Teller and others No. 3 Coy Medcalf is a 12-bbl. well in Barlow sand at 597-609 feet; shot with 60 quarts. In the Fordsville district, Fred G. Antone and others made a location for No. 4 Charles Downes. Cumberland Petroleum Co. and others No. 1, joint line deep test, was shut down for a drilling line at 1,976 feet. In the Heflin district. Boling & Callas No. 5 Mrs. J. Simmerman, an old gas well, is being drilled deeper to the second break in the Mississippi lime.

Eastern Fields

(Continued from Page 80)

In Clay County the Virginian Gasoline & Oil Corp. has started drilling No. 1,261 on the Brown, Swan, Goshorn and Geary land in Henry district. The Hope Natural Gas Co. is down 1,740 feet in No. 7,796 H. B. Davenport, same district. In Nicholas County this company is drilling at 1,175 feet in No. 7,805 Thompson Land & Coal Co. and at 295 feet in No. 7,795 on the Federal Coal Co. land. In Hamilton district the Hamilton Gas Co. is down 350 feet in No. 5 Kinney Hawkins Estate.

In Doddridge County the Henderson Oil Co. is drilling at 1,730 feet in the Alex Liggett test; W. H. Ahner at 250 feet in the N. J. Cunningham test; Broadwaters & Wilson at 1,400 feet in the W. F. Squares test. All are in Central district. In Skin Creek district, Lewis County, the Hope Natural Gas Co. is drilling at 3,000 feet in No. 7,790 Amanda Summers.

In Wetzel County, Israel H. Beren has a location for No. 5 Mary L. Hixenbaugh, Church district. In Green district, Manufacturers Light & Heat Co. will deepen No. 4 Matilda Lantz from the Maxon sand to lower formations.

Disposal of Petroleum Wastes

How many people have ever seen data giving the approximate thickness of a film of oil caused by pouring 25 gallons of oil evenly over the surface of one square mile of water? The answer and a lot of other very valuable information about "Disposal of Petroleum Wastes on Oil-Producing Properties" by Ludwig Schmidt and C. J. Wilhelm of the United States Bureau of Mines, Bartlesville, Okla., station is contained in the recently released Report of Investigation No. 3394 dated March, 1938. This publication contains a chapter on soils and water resources of Kansas Oil Areas by Ogden S. Jones. The investigation by Mr. Schmidt and his associates is a valuable contribution to the literature on this subject so vital to the oil industry. Copies may be secured from the Bureau of Mines at Bartlesville, Okla., or Washington, D. C. Incidentally, the thickness of that film of oil is 0.0000015 of an inch and is barely visible under most favorable light conditions.

New Mexico Bureau of Mines and Mineral Resources, Socorro, New Mexico, has recently issued bulletin 13 on the "Geology and Economic Features of the Pegmatites of Taos and Rio Arriba Counties, New Mexico." It is edited by Evan Just and copy can be obtained by writing the department in care of the New Mexico School of Mines, Socorro, N. Mex.

A Buckeye DITCHER for TRENCH 10" to 22" WIDE

• OVERALL WIDTH OF MACHINE ONLY 52"
• EASILY HANDLED IN CRAMPED QUARTERS

Big ditcher efficiency and economy comes to the small ditching field in the Buckeye Model 11. Built for steady, time saving operation, with speed for easy going and rugged strength for the toughest jobs – features of Buckeye engineering that always save you money on any job. Before you buy a ditcher, be sure you have the facts about Model 11.

This specially designed Buckeye trailer is for quick and easy transportation of the Model 11. The ditcher climbs onto the trailer under its own power, fully assembled.

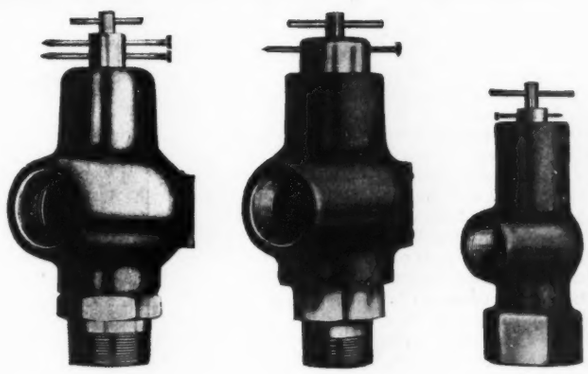
THE BUCKEYE TRACTION DITCHER CO., FINDLAY, OHIO

C. M. HEETER, SONS & CO., INC.
MAIN OFFICE AND WORKS, BUTLER, PA.

"Heeter's" Packers and Swabs

Heeter's Improved Patent Swabs, Corrugated Friction Sockets, Wire Line Pumping Outfits, Sand Pumps and other Gas and Oil Well Materials.

EVERY TIME THE NAIL SHEARS
IT'S MONEY IN YOUR POCKET!



Because it saves you
COSTLY PUMP REPAIRS

1 3" High Pressure special 2-nail type for largest slush pumps, where exceptional through-flow capacity is required.

2 2" High Pressure type, standard for slush pumps up to 18" and 20" stroke.

3 2" Low Pressure type for all hydraulic service up to 1000 pounds per square inch.

When pump pressure against the SHEAR-RELIEF Valve Piston reaches the shearing stress of the nail, the nail shears and pressure is released. The piston moves instantly through the valve body, against a soft cushion ring in the bonnet, entirely out of the way of released flow of fluid. Therefore, the sheared nail is the only damaged part . . . and another nail is all that is required to quickly reset the SHEAR-RELIEF Valve. In this manner, pump owners everywhere are protecting expensive pumps and pump parts . . . at the cost of a common nail.

See Page 71, your 1938 Composite Catalog, or write for full details.

FLUID PISTON SLUSH PUMPS
ABERCROMBIE PUMP CO.
GULF BLDG. HOUSTON TEX.

SHEAR-RELIEF VALVE

Oklahoma Operations

By DAL DALRYMPLE

Hughes Wildcat Opens Viola Lime Pool in Calvin District

A Viola lime pool was opened in the Calvin area of southern Hughes County, Oklahoma, at Phillips Petroleum Co. No. 1 Beeker, NE NW SW section 8-5-9, now near completion in the shallower formation after failing to find oil in Wilcox sand. It flowed 440 bbls. of oil in two hours after acidizing with 2,000 gallons at the week-end. Prior to acidization, it flowed 111 bbls. of oil in 30 minutes and died.

The hole originally was bottomed at 6,286 feet in Wilcox sand and plugged back when water intruded. Plugged-back depth is 5,660 feet, at base of Viola lime topped at 5,618 feet. It previously had shown for a producer in Cromwell sand at 4,398-4,455 feet, but chance of completing as a producer in that formation were lessened when water broke in. The Phillips company has most of the acreage in the immediate vicinity, with Ramsey Petroleum Co., Gulf Oil Corp. and W. L. Kistler also having leases in the general area.

Work was started on a wildcat south of the Perry gas pool and east of the Lucien field in Noble County at Cromwell-Franklin Oil Co. and Tuesday Oil Co. No. 1 Holcomb, C SW NW section 34-20-1w. Location was made on subsurface geology, with a fault showing on the west side of the structure.

Crude oil produced in the discovery well in the Ramsey pool, Payne County, is an intermediate base oil similar to that produced from Wilcox sand in the Seminole area, according to an analysis by the Bureau of Mines experiment station at Bartlesville. The gravity is approximately 43 degrees, with sulfur content of .18 per cent. The remaining distillate, consisting of 28 per cent of gas oil and heavier distillates, give indications that the oil will yield approximately the same type of products as are obtained from Seminole crude.

Clark & Co., operators in the Oklahoma City field, have filed petition with the corporation commission to create a new zone and provide 5-acre well spacing on the northwest edge of the field. The proposed new zone would include the W half of W half of section 15-12-3w and E half of section 16-12-3w, an area west of North Walnut avenue and north of Northeast Thirty-sixth Street. On basis of completed wells, engineers estimate that 5 acres would be the minimum acreage basis to be considered for proration units. It is thought a spacing order would cause owners of small tracts to unitize for drilling, thus conserving reservoir energy and lowering drilling and operating costs. Several of the wells in the area were drilled on tracts of less than 5 acres. The 22 producing wells in the area are classified in Dolomite or Upper Simpson zone for purposes of proration.

The Bureau of Mines estimated the April demand for Oklahoma crude at 526,500 bbls. daily, a decrease from the March recommendation of 547,700 bbls. The March allowable is 475,000 bbls. daily. The April market demand hearing will be held before the corporation commission March 31.

Wildcat Activity

H. H. Heydrick opened a new gas area in Muskogee County at No. 1 Bolby, C NE section 22-13-19, wildcat. It had sand at 667-70 feet and produced 5,500,000 feet of gas, with 266 pounds rock pressure.

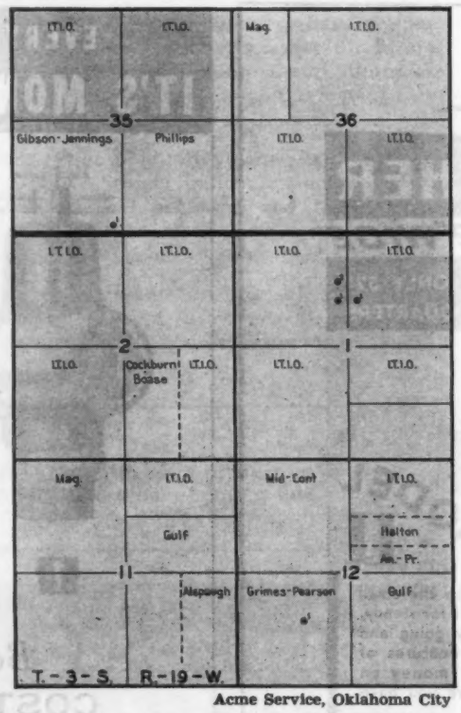
Southern Oil Co. No. 1 Henry, C NW NE section 10-8s-7e, wildcat in Bryan County, topped lime at 1,060 feet, had dry sand at 4,670-4,740 feet and was abandoned at 5,003 feet, total depth, in shale.

M. G. Martin No. 1 Parris, NW NW SW section 3-3s-19w, Tillman County wildcat, topped Cisco series at 1,605 feet, was bottomed at 3,506 feet, nothing was showing and it was dry and abandoned.

A. L. Bowles and others No. 1 Maine, NW NW NE section 11-4-6, location for wildcat in Pontotoc County, was temporarily abandoned.

H. W. Jones No. 1 fee, NW NE NW section 13-13-8, Okfuskee County wildcat, was an abandoned location.

New wildcat tests included in first reports of the past week were: J. Ben Russell and R. O. Ray No. 1 Hasley, NW NE NW section 4-1s-19w, Tillman County, location; Anderson-Prichard Oil Corp. No. 1 Hancock, SE SE NW section 23-6n-15w, Kiowa County, drilling with machine below 80 feet; Mid-Continent Petroleum Corp. and others No. 1 Smith, NE SE SW section 31-7-4, Pottawatomie County, building rig; Summit Drilling Co. No. 1 Moss, SE NE NE section 30-8-7, Seminole County, rigging up rotary; Alma Oil Co. No. 1 Martin, SW cor. section 4-12-7, Okfuskee County, building rig; Sun



Acme Service, Oklahoma City

Three outposts are being drilled in Tillman County, near Indian Territory Illuminating Oil Co. discovery well in section 1-3s-19w

Oil Co. and Loffland Brothers No. 1 Scafe, SE SE NE section 12-18-1e, northwest of Ramsey pool in Payne County, building rig.

Caddo County

Another big gas well was completed in the Cement field, Caddo County, at W. L. Kistler No. 2 Hedlund, SW NE NE section 11-5-9w. It had best pay at 4,953-77 feet, total depth 5,022 feet, and produced 161,700,000 feet of gas, with 2,050 pounds shut in pressure.

Ray Stephens, Inc., No. 2 Funk, SE SW SE section 1-5-9w, had sand in Deese formation at 5,329-54 feet, total depth, swabbed 305 bbls. of oil in 24 hours and flowed 295 bbls. daily through casing.

Same operator's No. 3 Griffin, SW NE SE section 27-6-10w, on the west side of the field, was completed as a 35,000,000-foot gasser, with 1,800 pounds rock pressure. It had sands at 4,295-4,331 feet and 4,350-73 feet, total depth 4,377 feet. Casing was perforated at 4,309-28 feet.

Ohio Oil Co. No. 4 Lackey, Account 2, NE SW NW section 11-5-9w, had sands at 3,434 feet, 3,960 feet and 4,230 feet, total depth 4,273 feet. It was plugged back to 3,742 feet, shot and pumped 90 bbls. of oil and 120 bbls. of water daily.

Same company's No. 2 Lackey, Account 3, NE SE NW section 11-5-9w, pumped 10 bbls. of oil daily after plugging back from total depth of 4,500 feet to 4,100 feet. It had broken sand at 4,032-37 feet.

Magnolia Petroleum Co. No. 6 Hedlund, SW SW NE section 11-5-9w, an old Cement well, was deepened from 3,834 feet to 3,854 feet, shot and pumped 51 bbls. of 35-gravity oil in 24 hours. This was an increase of 25 bbls. of oil daily.

Olson Drilling Co. No. 2-A Royce, NE NW NE section 12-5-9, new Cement test, had dug pits.

Pontotoc County

Magnolia Petroleum Co. No. 1 Augustanna, SW SW NE section 26-2n-7, the well that extended Hunton lime production in the Fitts field, Pontotoc County, was completed the past week at 4,070 feet, total depth. It flowed 486 bbls. of oil in the first four hours after acidizing. Gas gauged 3,205,000 feet. Bottom-hole pressure was 1,340 pounds. Hunton lime was found at 3,949 feet.

Lake Oil Co. No. 1 Grey-B, SE NW SW section 25-5-4, Beebe pool, had driller's top of Viola lime at 2,453 feet, total depth 2,605 feet, was shot, acidized and pumped 136 bbls. of oil in 24 hours.

Five old wells at Fitts were reworked and recompleted. Carter Oil Co. No. 2 Brown, NE SE SE section 25-2n-6, was plugged back from 4,280 feet to 3,700 feet, drilled out to 4,060 feet, acidized and pumped 100 bbls. of oil in 24 hours. Same company's No. 11 Hardin, NW NE SW section 30-2n-7, was plugged back from 3,563 feet to 2,475 feet, was shot and produced 3,000,000 feet of gas and 5 bbls. of oil in 24 hours.

Magnolia Petroleum Co. No. 1 Norris, SE SE NE section 26-2n-6, was plugged back to 4,212 feet from old total depth of 4,424 feet, shot, acidized and flowed 97 bbls. of oil in 24 hours. Same company's No. 2 Young, NE NE NW section 22-2n-7, was deepened from 3,926 feet to 4,331 feet and made daily potential of 199 bbls. of oil. The company's No. 9 Hardin, SW NE NW section 30-2n-7, was plugged back from 3,805 feet to 2,750 feet, perforated casing at 2,655-2,723 feet, and flowed 209 bbls. of oil daily.

New work in Pontotoc County: H. L. Blackstock No. 2-B Moody, SE SW SW SW section 23-2n-7, set 12-inch casing at 249 feet, waiting on cement at 285 feet; Magnolia Petroleum Co. No. 2 Augustanna, NE SW NE section 26-2n-7, building rig; Lake Oil Co. No. 2 Grey B, NE SE SW section 25-5-4, cellar and pits; Morrison & Lovelace No. 1 Kraeger, SE cor. section 25-5-6, rigging up rotary.

Seminole County

I. T. Troup and others No. 1 Snyder, NW NE NW section 4-6-6, Seminole County, topped sand at 2,798 feet, total depth 2,882 feet, was shot and flowed 930 bbls. of 36-gravity oil in 24 hours.

J. F. Smith No. 2 Harryman A, NW SW SW section 33-7-6, found sand at 2,845 feet, was bottomed at 2,929 feet, flowed 160 bbls. of oil in 24 hours, was shot and flowed and swabbed 530 bbls. of oil daily.

Foster Development Co. No. 2 Charnick, NE NW SW section 4-6-6, was dry and abandoned at 2,964 feet, total depth.

Pure Oil Co. No. 13 Reed, SW NW SE section 14-8-6, an old well in the Bowlegs area, was plugged back from 4,302 feet to 2,268 feet but was dry and abandoned.

Pottawatomie County

Magnolia Petroleum Co. No. 6 Banta, SE NE SE section 14-7-4, St. Louis area, Pottawatomie County,

AIR BALANCE YOUR PUMPING WELL AND.....

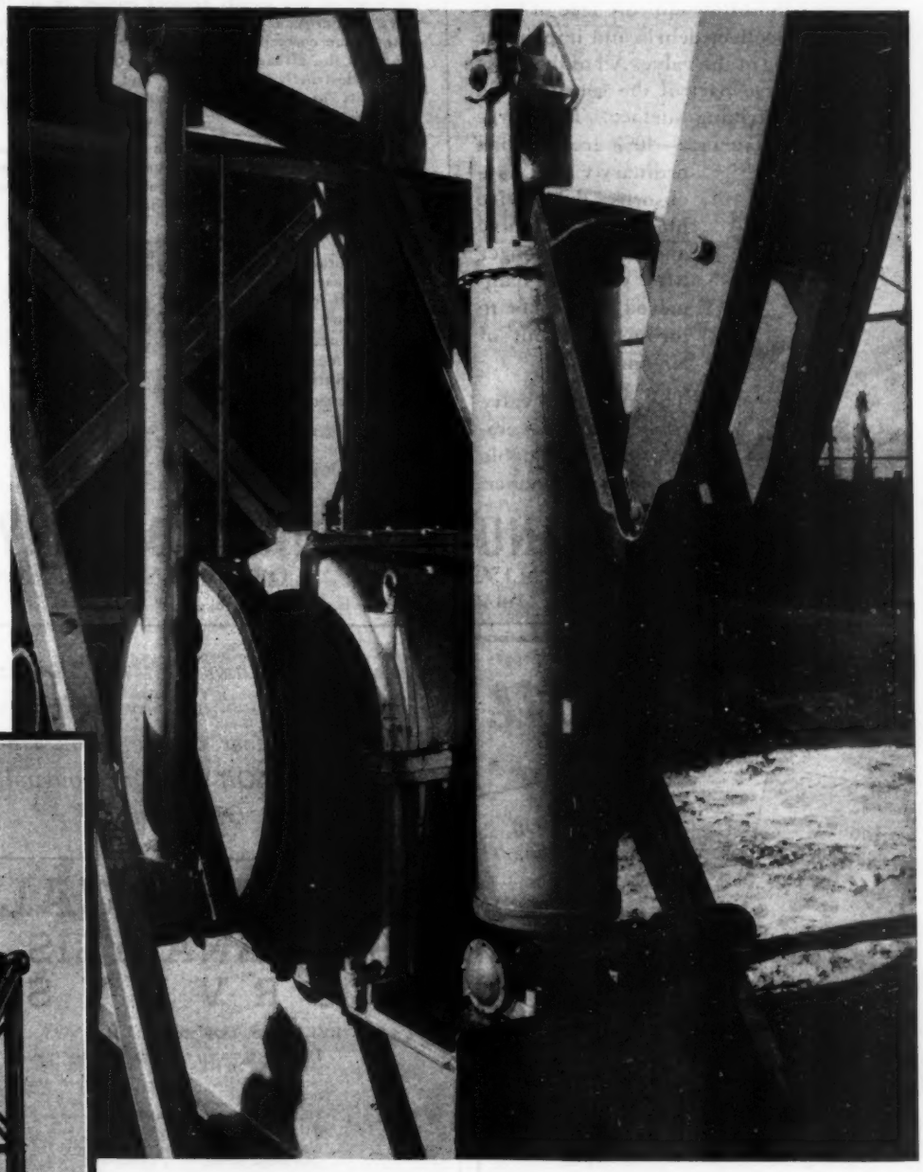
REDUCE YOUR "DOWN TIME"

WITH A

REED

AIR BALANCED PUMPING UNIT

COMPACT
ECONOMICAL
UNITIZED
PORTABLE



The cushioning effect of compressed air as a counterbalance—with its flexibility and greater ease of handling—cuts "down time" and rod parting to a minimum.

ALL HEAVY COUNTERWEIGHTS—WITH THEIR ACCOMPANYING VIBRATION AND SHOCK STRESSES ARE ELIMINATED.

{ Ask for Bulletin No. 378 }

REED ROLLER BIT COMPANY

P. O. BOX 2119, HOUSTON, TEXAS, U. S. A.

MacCLATCHIE MUD PUMP VALVES:
THE WORLD'S LARGEST SELLING PUMP VALVES

A leadership founded on highest quality & greatest economy

The "STREAMLINED"

MacClatchie Streamlined Valves are recognized as the standard of the industry. Their streamlined construction gives unobstructed fluid flow entirely free of lodging areas to collect debris and impair the proper closing of the valve. All of the cross bar and a large part of the seat forms a streamlined striking surface. This large metal striking surface—40% greater than ordinary valves—absorbs the entire blow of the valve and assures longer life without hammered out spots to throw valve out of alignment.

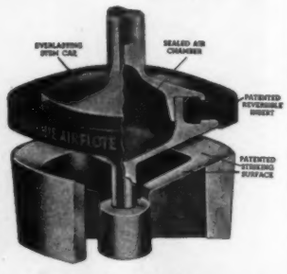
The patented valve rubbers are reversible, giving double life to every rubber.

The "AIRFLOTE"

The Airflote is a fundamentally new type of valve engineered for today's deep wells and high circulating pressures. A built-in sealed air chamber gives greater buoyancy, less fluid slippage, more efficient valve action and greatly reduced impact. In air the valve is approximately 20% lighter than other types of the same corresponding size. The reduced weight improves the efficiency and life of the valve by reducing destructive hammering and increasing the sensitivity of the valve to slight changes in fluid movements.

The air chamber is sealed with a large diameter tool joint thread that shoulders to give great strength and rigidity and prevents it from leaking or unscrewing in service. The valve has only three parts—valve body, cap and insert. As there is practically no wear on the cap it can be used over and over again, giving longer life and cutting the maintenance cost.

Write for detailed information.



MacCLATCHIE MANUFACTURING COMPANY
COMPTON, CALIFORNIA HOUSTON, TEXAS
EXPORT: GEO. R. WOODS, 17 BATTERY PLACE, NEW YORK, NEW YORK

NATIONAL AIROIL BURNER COMPANY
ESTABLISHED 1912 INCORPORATED 1917

Manufacturers
Installation
Engineers
Sales - Service

Industrial Oil Burners
Gas Burners
and
Furnace Equipment

NAIROIL Automatic Oil Burners for HOMES APARTMENT HOUSES CHURCHES, STORES FACTORY BUILDINGS OFFICE BUILDINGS

Offices and Salesrooms
1325-27 Girard Avenue
Philadelphia, Pa.

Factory
L St. & Sedgley Avenue

If you haven't had that FREE list of important oil books, by all means send your request to the Book Department, The Oil and Gas Journal, Tulsa, Oklahoma.

GEOPHYSICAL
SOIL ANALYSIS
SURVEYS

PERHAPS YOU SHOULD KNOW:

1. That more major concerns use this company's GEOPHYSICAL SERVICE for locating oil than perhaps any other one concern.
2. That although our mistakes are sometimes serious, yet . . .
3. We can accurately record structural accelerations 5 out of 6 times, and
4. Oil, possibly 6 out of 10 times . . . BY CHEMICAL ANALYSIS OF SURFACE SOILS.

WHY WRITE? There may be a Field Crew Manager or Traveling Representative already in your vicinity who will courteously answer your office in a few hours by CALLING COLLECT, station to station 2-9888, Fort Worth. Calls accepted from anywhere on earth.

CALL US COLLECT

Petroleum Building - Fort Worth, Texas

World's Largest Marketers of

PETROLEUM COKE

INQUIRIES AND OFFERS INVITED

GREAT LAKES COAL & COKE CO.

30 Rockefeller Plaza, New York, N. Y.

GENERAL OFFICES
Standard Oil Co. (Ind.) Bldg. Chicago, Illinois

flowed 385 bbls. of oil in 24 hours from Calvin sand topped at 3,131 feet, and was completed at 3,138 feet.

E. W. Jones No. 2 Polk, SE NE NE section 35-7-4, had Viola lime at 3,974 feet, total depth 4,117 feet, was acidized, swabbed 360 bbls. of oil net in 24 hours and pumped 235 bbls. daily. Gravity of the oil was 39 degrees.

Magnolia Petroleum Co. No. 5 Billington, NW NE NW section 22-7-4, an old well, was plugged back from 4,174 feet to 3,424 feet, perforated casing and flowed 185 bbls. of oil daily, with 4,170,000 feet of gas.

Lincoln County

Wilcox Oil & Gas Co. No. 9 Sac & Fox, SE NW SW section 15-14-6, Sac & Fox pool, Lincoln County, had Prue sand at 2,927-3,011 feet, total depth 3,015 feet, and flowed 162 bbls. of oil daily.

Same company's No. 2 De Lozier, NE NE NW section 15-14-6, was completed as a 50-bbl. well in Prue sand at 2,925-3,010 feet, total depth 3,015 feet.

Mudge Oil Co. No. 1 Robertson, SE NE SW section 10-14-6, found Prue sand at 2,973 feet, was bottomed at 3,054 feet, shot and flowed 53 bbls. of 46.6-gravity oil in 24 hours.

Noble County

Phillips Petroleum Co. and Shell Petroleum Corp. No. 2 Brumfield, SW SW NW section 22-23-2w, Billings pool, Noble County, topped Wilcox sand at 4,229 feet, total depth 4,284 feet. It flowed 725 bbls. of oil through tubing in 18 hours, and potential was estimated at 960 bbls. of oil.

J. Blubaugh No. 1-A Blubaugh, NW cor. section 1-24-1w, an old well in the Tonkawa pool, was plugged back from 2,571 feet to 2,512 feet, was shot and had 500 feet of fluid in the hole, but was not completed.

Estimated Daily Production

Estimated daily production of Oklahoma, for the week ending March 19, and for the preceding week, was as follows:

	Barrels	
	Mar. 19	Mar. 12
Allen	5,775	5,625
Billings	7,975	8,100
Burbank	7,500	7,550
South Burbank	10,600	13,350
Balance Osage	18,500	18,750
Blackwell district	5,375	5,500
Bristow-Slick	6,750	6,500
Chandler	2,350	2,375
Crescent	7,500	7,450
Cromwell	3,200	3,125
Cushing-Shamrock	10,400	10,300
Duncan district	3,625	3,650
Edmond	6,725	6,800
Fish	4,325	4,050
Fitts	60,825	59,100
Jesse	3,625	4,100
Graham	5,350	5,450
Gray	1,025	1,000
Healdton	9,325	9,375
Hewitt	3,975	3,950
Keokuk	6,250	5,800
Konawa	1,525	1,475
Lucien	12,750	13,000
Moore	7,050	7,125
Oklahoma City	125,100	129,150
Olympic	6,925	6,950
Ramsey	800	825
Sasakwa	1,825	1,775
Sholem-Alechem	2,875	2,900
Seminole district:		
Bowlegs	10,025	9,950
Carr City	4,150	3,925
Dora	5,750	5,650
Earlsboro	5,750	5,700
South Earlsboro	600	575
East Earlsboro	5,725	5,575
Little River	8,675	8,600
East Little River	950	925
Maud	825	800
Mission	1,825	1,775
Seminole	8,600	8,450
East Seminole	1,825	1,775
Searight	3,550	3,625
Total Seminole	58,250	57,325
St. Louis-Pearson	18,925	17,975
Tatums	3,800	6,300
Tonawa-Garber-Thomas	4,275	4,250
Wewoka	2,450	2,400
Yale-Jennings	3,700	3,725
Other pools	73,800	79,000
Total Oklahoma	519,025	526,075

Kay County

Clark Nye and others No. 3-A McCullough, NW SE SW section 5-28-1w, Braman pool, Kay County, was cleaning out after deepening from 3,482 feet to 3,508 feet.

Oklahoma County

Southwest Petroleum Co. No. 1 Ward, NE cor. section 35-12-3w, Oklahoma City area, Oklahoma County, was dry and abandoned at 6,428 feet.

New work in Oklahoma County: H. R. Hollenback No. 1 Landen, NW SE SW section 15-12-3w, cellar; Clark & Co. No. 1 Cobb, SW NW SE SW section 15-12-3w, rig and moving in tools; Gulf Production Corp. of Oklahoma No. 4 Schuster, SE NE SW SW section 15-12-3w, rig;

Hall & Briscoe No. 1 Jordan, SW NE NE section 35-12-3w, set 12½-inch casing at 1,002 feet, waiting on cement at 1,019 feet.

Creek County

Sinclair Prairie Oil Co. No. 2 Wallace, SW SE SW section 24-18-9, Creek County, topped Wilcox sand at 2,999 feet, total depth 3,017 feet, and flowed 130 bbls. of oil daily.

L. B. Jackson No. 3 Alberta, NE NW NW section 25-18-9, found Wilcox sand at 3,063 feet, was bottomed at 3,078 feet, swabbed 116 bbls. of oil the first day and was completed as a 45-bbl. pumper.

Fred Patrick No. 1 well, SE SE SW section 31-16-9, was dry and abandoned at 2,875 feet, total depth.

Pure Oil Co. No. 1 Brown, NE NE SW section 9-17-7, was bottomed at 2,776 feet, and pumped 10 bbls. of oil and 4 bbls. of water daily.

Shaw, Doak & Hughes No. 2 Anthis, NE NE NW section 25-17-7, was completed as a 15-bbl. pumper at 2,504 feet, total depth.

J. M. Scott No. 1-A Vance, NE NE NW section 7-18-7, found Skinner sand at 2,308-17 feet, total depth 2,474 feet, and pumped 10 bbls. of oil and 20 bbls. of water daily.

Comail Oil Co. and others No. 1 Coppedge, NE NE SW section 1-15-7, had a hole full of water and was abandoned at 3,904 feet, total depth.

George Marbie No. 2 Van Emmons, SE NE NE section 13-19-7, had Skinner sand at 2,456-88 feet, total depth 2,497 feet, and pumped 15 bbls. of oil and 1 bbl. of water daily.

Big Four Petroleum Co. No. 1 Rector, SW NW NE section 24-19-7, flowed 175 bbls. of oil in first 24 hours from Red Fork sand at 2,630 feet, total depth 2,674 feet, and was completed for 100 bbls. daily.

O. M. Ireland No. 4-A Blair, C W half NW SW section 11-17-10, found Prue sand at 1,747-82 feet, total depth 1,793 feet, and was completed as a 15-bbl. pumper.

F. O. Akin Oil Co. No. 2 King, SE NE SW section 35-18-8, plugged back from 2,599 feet to 2,587 feet and pumped 20 bbls. of oil daily.

Sooner Oil & Gas Co. No. 1-A Collins, NW SE SE section 8-18-12, an old well, was deepened from 1,648 feet to 1,995 feet and was abandoned.

Whitehill and others No. 8 Morrison, CNL NE SW section 8-18-11, was moving in machine. Strozier Drilling Co. No. 5 Atkins, SW NW SW section 12-16-11, was a location. Sinclair Prairie Oil Co. No. 13 Upton, CEL NE NE section 4-16-12, an old well, was preparing to deepen.

Osage County

L. J. Vance No. 2 Osage, SW SW NW section 25-26-8, Osage County, had Big lime at 1,750 feet, total depth 1,784 feet, plugged back to 1,778 feet, was shot at 1,768-73 feet in Big lime, acidized and pumped 12 bbls. of oil and 1 bbl. of water daily.

W. C. Elliott & Brother No. 3 Osage, NW SE SW section 10-21-12, was completed as an 8-bbl. producer after a shot at 1,470-90 feet, total depth 1,493 feet.

J. E. Crosbie No. 1 Osage, SW SE NE section 6-24-8, produced 100,000 feet of gas but had a hole full of water at 2,531 feet, total depth, and was abandoned. Mississippi lime was topped at 2,530 feet.

New Osage operations: W. V. Phillips No. 8 Osage, NW section 17-20-12, location; Pure Oil Co. No. 178 Osage, NE section 5-23-8, drilling at 485 feet; Tide Water Associated Oil Co. No. 8 Osage, SE section 20-24-9, location.

Payne County

Sun Oil Co. No. 2 Kolb, NW NE SW section 5-19-5, Garr area, Payne County, had Misener sand at 3,605-10 feet, total depth 3,613 feet, and was completed for an estimated 70 bbls. of oil daily.

Okfuskee County

Hayes and others No. 1 Kennedy, SW SW SE section 21-10-11, an old Okfuskee County well, was completed as a 40-bbl. pumper after deepening from 2,660 feet to 2,929 feet and acidizing. Gravity of the oil was 40 degrees.

A. W. Swift and others No. 1-A Adam, SE NE NW SW section 14-13-9, had a hole full of water and was abandoned at 1,059 feet.

Mid-Continent Petroleum Corp. No. 2 Irelan, NW NE SW section 10-13-10, was rigging up rotary for a second test in a newly opened area.

Okmulgee County

C. D. Klingensmith No. 18 Grayson, SE NW section 35-16-11, Okmulgee County, had Dutcher sand at 2,294-

(Continued on Page 97)

GOTT WATER COOLER
Made in 3, 5, 8, 10, and 20 gallon sizes.

Gotkoo!
WATER CANS & COOLERS

GOTT Water Coolers are the convenient way to keep drinking water handy to the worker, protect it from impurities. Their exclusive construction keeps water cool for long periods. Snug fitting large removable top, handy non-leaking push button faucet. GOTT Water Cans for handy field use. Your Supply Store has them, get one today!

GOTT WATER CAN
Made in 1½, 3, 5, and 10 gallon sizes.

H. P. GOTT MFG. CO.
WINFIELD, KANSAS
KEEP PURE DRINKING WATER ALWAYS HANDY

Memo: Contact Atlas-Lansing for Drop Forgings that resist Corrosion and Heat.

ATLAS DROP FORGINGS
All shapes and sizes to 500 lbs.
ATLAS DROP FORGE COMPANY • LANSING, MICHIGAN

200,000
SEEP AND
STAR CUPS
IN STOCK
C. L. & W. W. AUER
Established 1880 CORRY, PA.

GET LUFKIN FOR UTILITY

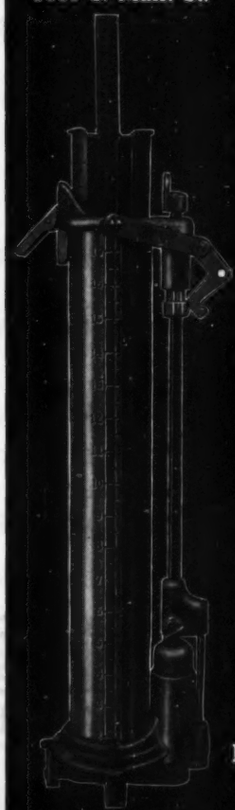
Oilmen! No matter what pattern Tape or Rule you prefer, there's an accurate, sturdy and durable Lufkin to suit your needs. The "Mezurall" Tape-Rule and "Red End" Rule here shown are but two of the many top-notch favorites in the extensive line of Lufkin Measuring Devices.

See Lufkin pages in Petroleum Register and Composite Catalog.

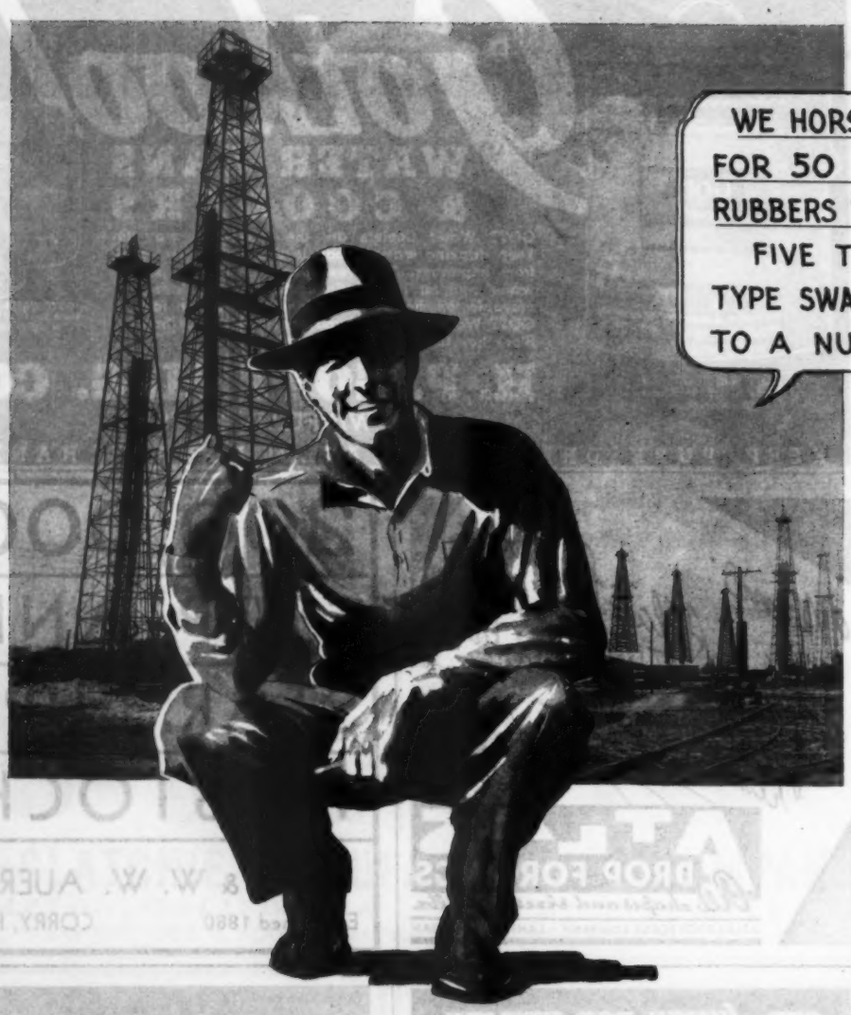
Write for free complete catalog No. 12.

NEW YORK THE LUFKIN RULE CO SAGINAW, MICHIGAN WINDSOR, ONT.
TAPES — RULES — PRECISION TOOLS

W. L. WALKER CO.
1001 S. Main St. Tulsa, Okla.



Manufacturers of
TULSA OIL THIEF
DISTRIBUTORS
LUX CO² Equipment
NATIONAL FOAM Products
AMERICAN FOMON Products
FYR-FYTER CO. Products


WE HORSED THIS MISSION SWAB FOR 50 ROUND TRIPS AND THE RUBBERS WERE STILL OUT TO GAUGE.
FIVE TRIPS WITH THE REGULAR TYPE SWAB AND THEY WERE WORN TO A NUBBIN.

MISSION VALVELESS SWABS

assure you

3 TO 15 TIMES FASTER SWABBING

- Earning quicker profits by getting oil into the tanks faster.
- Cutting down costs of labor and rig rental.
- Swabbing more wells per day.

SAFER: Gas pressure will open split rubber permitting gas to by-pass, resuming its load without loss after gas has passed. NO LOOSE LINE OVER DERRICK FLOOR TO ENDANGER CREW.

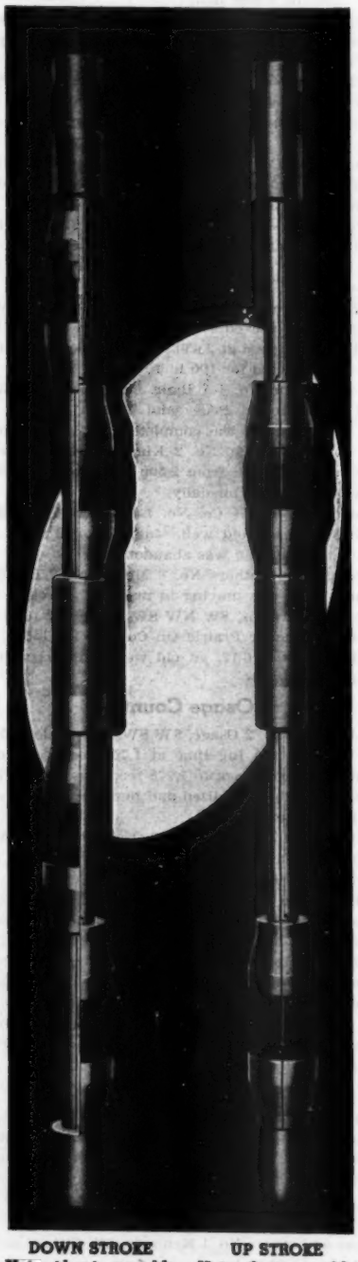
Sold Through Supply Stores Everywhere

MISSION MANUFACTURING CO.

HUMBLE ROAD — HOUSTON, TEXAS

EXPORT OFFICE: 30 ROCKEFELLER PLAZA, NEW YORK

Mission Slips . . . Mission Valves . . . Mission Pistons . . . Mission Piston Rods . . . Mission Swabs



DOWN STROKE Note that movable half of each rubber has risen above stationary half . . allowing an area for fluid passage much larger than that of conventional type swabs.

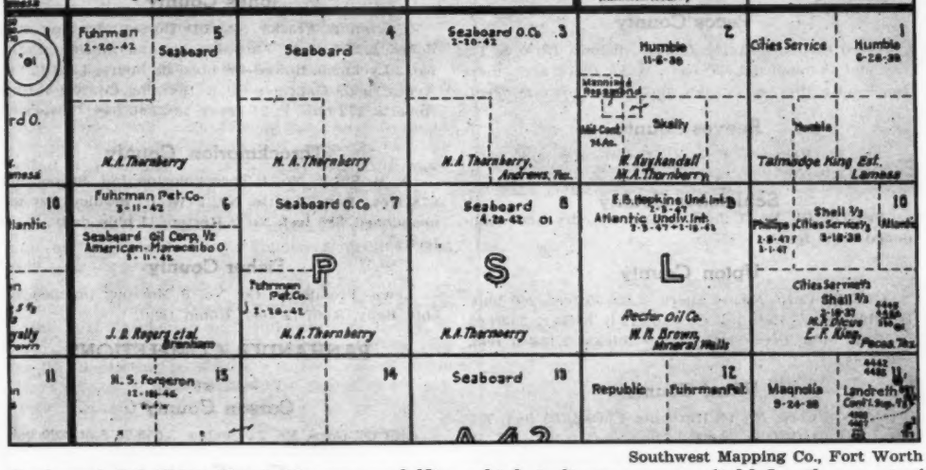
UP STROKE Note that movable half of each rubber has dropped back beside its other half. Rubbers now in swabbing position.

MAKING ECONOMY RECORDS IN EVERY OIL COUNTRY

Sand Hills, Crane County, Has Big Well in Ordovician

By MITCHELL TUCKER

FORT WORTH, Tex., Mar. 21.—The completion of a third large producer in the Ordovician horizon of the Sand Hills field, Crane County, has again revived interest in producing possibilities below the Big lime in western Texas. Gulf Oil Corp. extended the flush deep production of the Sand Hills field a quarter of a mile south in No. 7 Waddell, which gauged at the rate of 3,665 bbls. daily on official test. For the first three hours of the six-hour railroad commission gauge, the well made 411 bbls., and increased slightly during the last three hours for a total of 915 bbls. Production is from a 10-foot saturated section of Ellenburger at 6,002-12 feet. The oil tests 46 gravity, and gas measures approximately 4,000,000 feet per hour on potential test. This new producer is located as a south offset in the center of a 40-acre tract to Gulf's No. 5 Waddell, which had the record potential of 8,173 bbls. Deep production is limited to the north by dry holes and on the east and west by dry holes or small producers. Additional wells to the south are expected following this favorable completion.



Southwest Mapping Co., Fort Worth

Seaboard Oil Corp. No. 1 Munger and Nix, which indicates a new field 5 miles west of the Fuhrman pool, Andrews County. It has been temporarily shutdown awaiting outcome of 3-mile outposts to the east and south

About 12 miles south of Sand Hills, Magnolia Petroleum Co. and others No. 1-A McKee, important Ordovician test in the Imperial area of Pecos County, had impressive showings in this same horizon. It is now underreaming 7-inch casing at 5,420 feet, and carrying 4,000 feet of oil, believed to be coming from the upper level of saturation.

The other Ordovician test that came to the front was Humble Oil & Refining Co.'s deep exploratory hole in Tom Green County. No. 1 Lewis & Wardlaw topped the Ellenburger at 6,989 feet, which was considered high for that region. At the present depth of 7,044 feet preparations are being made to make drill stem tests.

Ector County

Ector County continues far in the lead of West Texas activity, for at the close of the week 89 wells were drilling, 21 rigging up and 26 new locations announced. The Harper, Foster, Goldsmith and Penwell areas are most active.

The busy Harper field has over 30 active locations, and last week its second largest producer was completed. Broderick & Calvert No. 4 Parker, NE cor. E half SE quarter section 22, Block 44, T.&P. Survey, gauged 2,900 bbls. daily after shooting with 575 quarts and drilling to a total depth of 4,182 feet. Same firm No. 2 on the same lease gauged 2,998 bbls. officially. Eight new wells were started at Harper last week, three by Barnsdall, two by Oil Well Drilling Co., and one each by the Texas Co., Continental Oil Co., and Amon G. Carter of Fort Worth.

The Foster field, also an active spot in Ector County, was given a large east edge completion, thus stimulating future activity in that direction. Arrow Drilling Co. No. 1 Foster gauged 1,120 bbls. per day after shooting the section with 360 quarts, total depth 4,260 feet.

Pecos County

The British American Oil Co. entered the Payton pool of northern Pecos County by the purchase of L. B. Hoss and Frank Downey's interest in their one producer and surrounding block. The discovery well, No. 1 Cities Service-Cordez, H.&G.N. Survey, was completed in December, 1937, for an initial gauge of 172 bbls.

Val Verde County

In northeastern Val Verde County, near Del Rio on the Mexican line, small oil production has recently been developed on the Whitehead and Wardlaw ranch by E. P. Campbell of Abilene and R. R. Ross of Dallas at around 300 feet. Four producers have been completed thus far, averaging from 10 to 15 bbls. each daily. Crude oil gravity is 17 degrees. A small refinery is planned in Del Rio to handle this production opened far from any possible pipe line connection.

North Permian Basin

A new large producer, and possible 1-mile extension to the southeast, were reported in the Slaughter field of southern Hockley County last week. Honolulu Oil Corp. No. 1-51 Alex Slaughter gauged 372 bbls. on an official 12-hour test after its second acid treatment. Saturation was logged from 4,899-4,908 feet and 4,912-73 feet. Gulf Oil Corp. No. 1 M. G. Gordon, 1-mile southeast outpost, has drilled to a total depth of 5,017 feet, and is bailing about 20 bbls. of oil and 1 gallon of salt water on each six-hour test. The latter well is below the subsea datum of the Slaughter field proper, and is thought to have established the water table in this structure. Two miles southwest of the field, Gulf's No. 1 Mallett is drilling at 5,010 feet without showings.

Seaboard Oil Corp. No. 1 Munger & Nix, Andrews County, prospect for a new field opener 5 miles west of the Fuhrman pool, is shut down temporarily after swabbing and testing at the rate of 5 bbls. per hour for several days. Operations here will be temporarily suspended while an east and a south offset are drilled. Three miles to the east, Seaboard Oil Corp. has begun the drilling of their No. 1 Thronberry. Three miles south by southeast of the Munger & Nix discovery, H. S. Forgeson No. 1 Lockhart and Brown is preparing to deepen after being shut down for several weeks at 179 feet awaiting outcome of that test.

West Central District

A proposed 3,500-foot Palo Pinto lime well on city of Abilene lands in Taylor County is promised by Forest Development Corp. within the near future, following final assembly of its 3,000-acre block at the edge of the city. A total of 1,473 acres is owned by the city. Small production has been had in this vicinity from shallow depths for several years, and three former deep tests reported attractive showings in the Palo Pinto, but were not acidized. The area was recently core drilled by the Forest company.

The Ordovician production at Cisco Lake in Eastland County continues to be attractive, and additional drilling is assured. Lone Star Gas Co. No. 1 Thomas, west offset to the discovery well, gauged 1,183 bbls. last week from Ellenburger lime at 4,118-57 feet. The same company's No. 1 Van Parmer was deepened and on its present testing is gauging 40 bbls. hourly. No. 2 Van Parmer, north offset to the discovery well, is drilling below 2,500 feet. The Hickok Oil & Gas Co. has one producer here, and is now drilling No. 1 Grover S. Cleveland.

Danciger Oil & Refineries No. 1 Roberts afforded the Lewis pool of Jones County an eastern extension two locations, by gauging 272 bbls. initially from saturated Bluff Creek sand, 1,922-46 feet. Offset locations were immediately staked.

Eastland County Ordovician

Encouraged by recent good Ordovician completions in Eastland and Callahan counties, Dobbs Oil Co. of Dallas is preparing to drill No. 1 Greer 2½ miles south of Carbon, Eastland County. Rotary contract calls for drilling to the Marble Falls lime, with cable tools to the total depth.

Four new wildcats, all seeking the Ranger sand pay, were staked in the Rising Star area last week. Hayner, Reeves & Hose No. 1 Larkin is located 3 miles northwest of Rising Star and will go to a contract depth of 3,200 feet. Nine miles southeast of Rising Star, in Comanche County, W. G. Sawyer and others have contracted for the drilling of No. 1 A. L. McDaniel. Four miles west of May in Brown County, No. 2 Garvin will test the Ranger pay, and is being drilled by Lockhart, Whiteside & Harvey.

WEST TEXAS COMPLETIONS

(24-hour gauges)

Cochran County

Wiggins & Lawson No. 1 Carrie S. Dean, 4,993-5,077 feet, 102 bbls.

Crane County

Atlantic Refining Co. No. 1-A University, 3,480-3,557

How to whip

Sand Troubles

Specify and

USE

B-M-W

Tex Type

Working

Valves

Ideal for Common Barrels. For insert pumps use Tex Type Plunger Fittings.

The many Composition Rings shown are separated by metal washers.

In effect it is a grooved seal plunger, made from rubber and fabric, which readily adapts itself to the tube in which it works.

MORE FLUID IS HANDLED

No appreciable slippage.

Very little frictional drag.

Exceptionally long runs are obtained because this valve can "take it".

WHO SELLS THEM?

Leading B-M-W Products are obtainable at supply stores: ● TEX TYPE Plunger Fittings and Valves; ● ADMORE Insert Pump Anchors; ● NEILSON Tools (Safety Sucker Rod Hooks, Tubing Hooks, Rod Elevators, Sucker Rod Sockets, etc.); ● BALLS and SEATS (made for every pumping service); ● ADMORE Liner Barrels; and ● COLLINS Belt Clamps.

BRADFORD MOTOR WORKS INC.

OIL WELL SUPPLIES

BRADFORD, PA. — TULSA, OKLA.

feet, 927 bbls. Gulf Oil Corp. No. 21 Waddell, 3,490-3,513 feet, 7,144 bbls. Pitzer & West No. 2 Cordova-Union, 2,058-2,144 feet, 434 bbls. Gulf Oil Corp. No. 28 Crier-McElroy, 2,840-2,955 feet, 511 bbls.; No. 170 McElroy, 2,825-3,005 feet, 481 bbls.

Crockett County

Armer & Black No. 4-B Powell, 2,619-62 feet, 746 bbls.

Ector County

Barnsdall No. 5 Cowden, 4,026-4,150 feet, 1,630 bbls. Arrow Drlg. Co. No. 1 Foster, 4,180-4,230 feet, 1,093 bbls. Barnsdall No. 8 H. Foster, 4,100-4,230 feet, 540 bbls. Broderick & Calvert No. 7 Foster, 4,120-4,320 feet, 766 bbls. Gulf Oil Corp. No. 71 Goldsmith, 4,130-80 feet, 2,287 bbls.; No. 75 Goldsmith, 4,140-4,200 feet, 1,086 bbls. Shell Petroleum Corp. No. 4-A Cummins, 4,200-45 feet, 822 bbls.; No. 1-D University, 3,424-3,641 feet, 816 bbls. Texas Pacific Coal & Oil Co. No. 17 Scharbauer, 4,175-4,250 feet, 2,310 bbls.

Fisher County

Lewis Production Co. No. 5 Morrow, 3,565-72 feet, 2,310 bbls.

Howard County

Continental Oil Co. No. 5-A Overton, 2,500-12 feet, 839 bbls. Stanley Cosden and others No. 2 Scott Heirs, abandoned location. Moore Brothers Corp. No. 1-A Snyder, 2,628-2,845 feet, 626 bbls. Schermerhorn Oil Co. No. 9 Kloh, 2,185-2,218 feet, 792 bbls.

Pecos County

Aero Gas & Refining Co. No. 1 Iowa Rlty. & Tr., dry and abandoned 1,520 feet. M. H. Black and others No. 1 Iowa Rlty. & Tr., dry and abandoned 1,800 feet.

Reeves County

Sid W. Richardson No. 1 Brown, dry and abandoned 4,638 feet.

Schleicher County

Tex-Tor Oil No. 1 Judkins Spencer, dry and abandoned 6,450 feet.

Upton County

Gulf Oil Corp. No. 16 Sherk, 2,326-55 feet, 260 bbls. Humble Oil & Refining Co. No. 72-B Ricker, 2,654-95 feet, 426 bbls. Peerless Oil No. 5 Shirley, 2,138-57 feet, 160 bbls.

Ward County

Gulf Oil Corp. No. 98 Hutchins, 2,569-2,765 feet, 737 bbls.; No. 92 O'Brien, 2,600-2,720 feet, 560 bbls. F. B. Hadlock No. 1 Cyrus Jones, dry and abandoned 2,120 feet. Humble Oil & Refining Co. No. 32 Richter, 2,876-2,936 feet, 641 bbls. Octogan Oil No. 2 Buchanan, 2,240-2,330 feet, 377 bbls. Sidwell & Myers No. 6 Cannon, dry and abandoned, 2,353 feet. Superior Oil Corp. No. 1 Burks, 2,156-2,327 feet, 1,500,000 feet gas. Texas Pacific Coal & Oil Co. No. 14 Barker, 2,260-2,311 feet, 373 bbls.

Winkler County

Amerada Pet. Corp. No. 8-A Daugherty, 2,229-74 feet, 737 bbls. Humble Oil & Refining Co. No. 22-C Walton, 2,980-3,040 feet, 1,193 bbls. J. C. Maxwell No. 1 Cartex, 2,765-3,097 feet, 441 bbls. J. R. Sharp No. 2-A Walton, 3,300-40 feet, 234 bbls.

Yoakum County

Denver Producing & Refining Co. No. 3-A Whittenberg, 4,840-5,060 feet, 998 bbls. Mid-Continent Petroleum Corp. No. 2 Bennett, 5,038-5,236 feet, 1,916 bbls. Ohio Oil Co. No. 1 Clawater, dry and abandoned 5,353 feet.

CENTRAL TEXAS COMPLETIONS

Shackelford County

Kittery Oil Co. No. 7 Annie Eahart, 4 bbls. daily, 812-20 feet. W. M. Reed No. 6 Arendt, dry and abandoned, 249 feet. Duff & Hart No. 10 Casey, dry and abandoned, 594 feet. Healey & Walker No. 1 Newell, dry and abandoned, 1,892 feet. L. C. Heltzel No. 1 Matthews, dry and abandoned, 688 feet.

Taylor County

Dr. W C. Bramhan No. 1 Armstrong, dry and abandoned, 2,122 feet.

Jones County

Ungren & Frazier No. 7-D Dorsey, dry and abandoned, 2,337 feet. Fain-McGaha and Sinclair Prairie No. 2 Lyckman, flowed 439 bbls. six hours, 3,234-49 feet, Avoca field. Danciger Oil & Refining Co. No. 1 Hugh Roberts, 272 bbls. in 24 hours, 1,922-46 feet, Lewis field.

Throckmorton County

A. B. Swain No. 1 Throckmorton Ind. School, dry, 678 feet. Dave Whitby No. 2 W. L. Bradley, dry and abandoned, 380 feet; No. 2 Horton, 11 bbls. daily, 354-75 feet.

Fisher County

Lewis Production Co. No. 5 Morrow, pumped 423 bbls. daily, 3,567-72 feet, Rotan field.

PANHANDLE COMPLETIONS

(24-hour gauges)

Carson County

Gulf Oil Corp. No. 23 Cooper, 3,055-76 feet, 369 bbls.

Gray County

Christie & Hickman No. 2 First National Bank, 2,795-2,835 feet, 117 bbls. Danciger Oil & Refining

New Capital

for your business

Company owners and executives seeking financing now are invited to communicate with us. As originators of industrial financing, we act as your agent, obtain access to capital markets for you, and represent your interests in the negotiations. Inquiry invited. Mr. Grace can arrange to be in San Antonio, Houston or Dallas in early April.

G. V. Grace

Originator of Corporation Financing

11 WALL STREET, NEW YORK

Can You Spell

"DEPENDABILITY"

***in* FIVE**

LETTERS?

H-O-U-G-H spells dependability, when it comes to working barrel valves . . . and strict economy, too. It *pays* to specify Hough. For safety's sake, use the Hough "Protex" Upper Valve, illustrated. The Charles N. Hough Mfg. Company, Franklin, Pa. and Tulsa, Okla.

HOUGH

Working Barrel Valves

See Our Exhibit
INTERNATIONAL PETROLEUM EXPOSITION
TULSA
MAY 14-21

Co. No. 17 Powell-Beck, 2,850-55 feet, 129 bbls. Plains Holding Co. No. 4 Chapman, 2,606-40 feet, 383 bbls. Shamrock Oil & Gas Co. No. 6 Big Gray-Saunders, 3,070-89 feet, 383 bbls. Stekol Oil Co. No. 1 Combs-Worley B, 3,013-70 feet, 20 bbls. Texas Co. No. 2 Mayberry, 2,800-20 feet, 332 bbls.

Hutchinson County

Alma Oil Co. No. 3 Whittenberg D, 2,975-3,016 feet, 401 bbls. Barnsdall Oil Co. No. 8 Lewis, 2,937-3,000 feet, 740 bbls. Drilling & Exploration Co. No. 15 Watkins, 2,975-3,022 feet, 468 bbls. Midstates Oil Co. No. 9 Whittenberg, 2,678-2,740 feet, 759 bbls. Simpson Oil Co. No. 3 Terry, 3,010-42 feet, 581 bbls.

Moore County

Shell-Sinclair Prairie No. 1 Lindsay, 2,770-3,115 feet, 37,600,000 feet of gas.

East Texas Fields

(Continued from Page 79)

the first major company into this increasingly active area was seen last week when the Texas Co. staked location for No. 1 Dowdy. The well will be on a 70-acre lease in the George Hancock Survey and is a south offset to the newly completed Hunt and others No. 2 Dowdy.

Deep Tests

With possibilities of a deep producing horizon in East Central Texas hinging on the outcome of three deep tests, two of which are now below 9,000 feet, Stanolind, Humble, and American Liberty Oil companies are still actively engaged in seeking production from the Lower Marine.

Stanolind Oil & Gas Co. No. 1 Tenny Norris, in the K. Thrasher Survey, 5 miles north of Kosse in Limestone County, has plugged back from total depth of 9,951 feet to 8,594 feet. Casing was perforated at 8,519-29 feet, and retainer was set at 8,594 feet preparatory to testing a previously encountered showing.

Humble Oil & Refining Co. and Gulf Oil Corp. No. 1 E. Robertson, M. Mann Survey, 2½ miles southwest of Longview in Gregg County, is drilling hard sand below 9,120 feet.

On the Kelsey dome in Upshur County, American Liberty Oil Co. and Tom Hunter No. 1 J. P. Carter, in the J. H. Fields Survey, 1 mile north of Kelsey, is reported to have completed arrangements for carrying the test to the Lower Marine, expected around 10,000 feet. The hole is now bottomed 400 feet in the Travis Peak at a total depth of 7,933 feet.

Talco Prospects Dimmed

The Ajo Oil Co. No. 1 Samders, C. Paine Survey, sub-basal Glen Rose test in the Franklin County portion of the Talco pool, has so far given little promise of being deepened to the Lower Marine. Workmen have completed a fishing job at 5,906 feet, total depth, and operations are now suspended awaiting the decision on carrying the hole deeper. Only saturation reported since the hole was deepened from its original abandoned depth of 4,371 feet, was in the Basal Glen Rose from 5,461 to 5,475 feet.

Woodbine Sand Tests

Lone Star Gas Co. has added its third producer in the huge Buffalo gas area in central Leon County. The company's No. 1 Melaska, M. C. Lee Survey, was estimated good for 58,000,000 feet of gas daily from a section of the Woodbine sand topped at 5,612 feet. The Lone Star company recently completed an 18-inch pipe line extension into the Buffalo gas area from its 12-inch line extending from the Long Lake field of Anderson County to East Central Texas towns.

Prospects of Woodbine production for Mayo, Housh & Thompson No. 1 Mayfield, wildcat 4 miles southeast of Tyler in Smith County, were dimmed when a core from 4,927 feet to 4,941 feet revealed only poker-chip shale and course-grained, porous salt water sand. The test will be carried a few feet deeper where an electrical survey is expected to be run before final abandonment is announced.

Plaza & Brooks No. 1 Davidson, wildcat in the Marchants Survey, 1 mile northwest of Seagoville in southern Dallas County, is drilling ahead in the Georgetown lime at 2,085 feet. The well topped the Woodbine at 1,500 feet where it encountered a 500-foot section in which there was no fresh water. This fact led operators to believe there might be a fault structure between the test and the Seagoville water wells, producing from the same section to the south.

Mercia Oil Co. has filed intention to drill a new Cherokee County Woodbine wildcat on the Birmingham Development Co. lands, Levi Jordan Survey, southwest of the town of Rusk in the central part of the county.

EAST TEXAS FIELD COMPLETIONS

(One-hour gauges)

Rusk County—Kilgore Area

Geier Brothers No. 8 W. G. Williamson, 3,679-80 feet, 30 bbls.; No. 9 W. G. Williamson, 3,715-16 feet, 40 bbls. Kathleen Oil Co. No. 10 Peterson, 3,626-51 feet, 40 bbls. C. L. McMahon No. 15 S. S. Laird, 3,623-35 feet, 27 bbls. Navarro Oil Co. No. 12 J. N. Peterson, 3,656-73 feet, 100 bbls.; No. 13 J. N. Peterson, 3,665-75 feet, 88 bbls. J. D. Wrather No. 7 G. G. Morris, 3,655-55½ feet, 20 bbls.

Gregg County—Longview Area

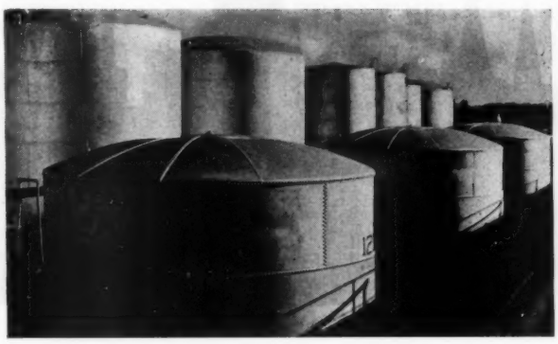
Arkansas Fuel Oil Co. No. 13 Lee, 3,596-3,609 feet, 32 bbls. L. G. & S. Oil Co. No. 5-C D. W. McQueen, 3,565-3,600 feet, 1½ bbls. Magnolia Petroleum Co. No. 34 L. J. Everett, 3,610-27 feet, 100 bbls.; No. 11 V. L. Goolsby, 3,529-44 feet, 100 bbls. Shell Petroleum Corp. No. 7 R. L. Bassham, 3,564-3,673 feet, 64 bbls. Shulman & Atkinson No. 2 Mayfield Co., 3,570-73 feet, 1½ bbls. Sinclair Prairie No. 59 Moncrief, 3,555-3,666 feet, 30 bbls.; No. 60 Moncrief, 3,530-3,657 feet, 35 bbls. B. H. Skipper No. 4 T. Snoddy, 3,583-3,603 feet, 80 bbls. Stanolind-Tide Water No. 15 J. W. Aiken, 3,530-3,622 feet, 38 bbls.; No. 11 L. E. Orms, 3,518-81 feet, 65 bbls. Sun Oil Co. No. 9-A A. Tooke, 3,605-3,703 feet, 32 bbls.

Upshur County—Longview Area

Humble Oil & Refining Co. No. 40 J. K. Edwards, 3,610-81 feet, 65 bbls. T. P. Looney No. 2-B C. T. Shelton, 3,726-27 feet, 20 bbls. P. H. Pewitt No. 7 J. B. Porter, 3,716-17 feet, 25 bbls.; No. 20 Williford, 3,681-82 feet, 30 bbls.

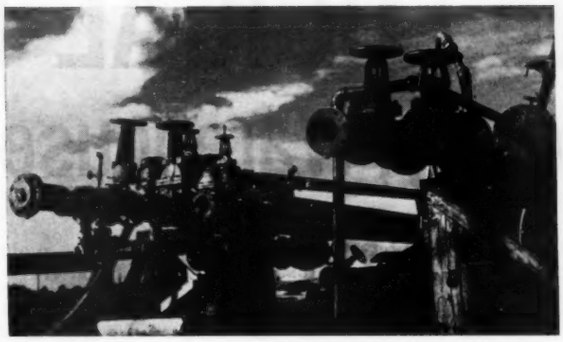
Gregg County—Kilgore Area

Hugo Allen No. 3 Nolan, 3,583-3,614 feet, 70 bbls. General American No. 12 D. Smith, 3,588-89 feet, 80 bbls. Gulf Petroleum Corp. No. 43 A. Spear, Trustee. 3,608-14 feet, 60 bbls. Humble Oil & Refining Co. No. 94-B S. S. Laird, 3,546-3,651 feet, 55 bbls. R. Lacey No. 4 B. R. Lacey, 3,542-50 feet, 40 bbls. Nioco Oil Co. No. 9



STORAGE

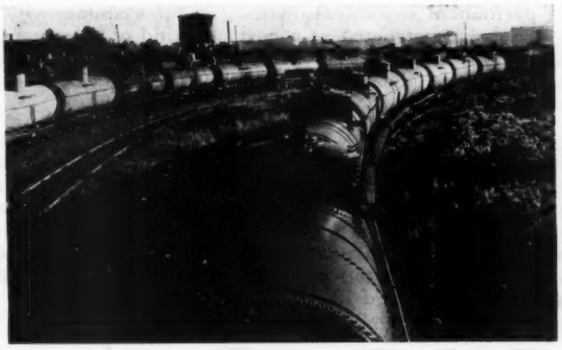
Anything that flows through a pipe line is best stored at General American. You can accumulate cargoes by the single carload or in train loads. You can lease tanks for a single shipment—or for a year. You can use small two hundred barrel tanks, or the big fellows of 80,000 barrels. Your exact requirements are met in the most efficient way.



SAFETY

The separate lines shown here guard your product from contamination.

Low insurance costs at our terminals are proof of extra savings. Here you have all-steel tanks—most scientific safety appliances—complete fire protection—minimum evaporation loss.



SPEED

They say, "General American are specialists in speed." Solid trains are dispatched at all hours. Ships are quickly cleared. It is speed, with careful handling, that means extra savings.

"Strategically located to serve you"

GATX GENERAL

GENERAL AMERICAN TANK STORAGE TERMINALS

A DIVISION OF GENERAL AMERICAN TRANSPORTATION CORPORATION

Goodhope, La. (Port of New Orleans) Westwego, La. (Port of New Orleans) Carteret, N. J. (Port of New York) Galena Park, Tex. (Port of Houston) Corpus Christi, Texas

The LOGICAL Location
for the WORLD'S GREATEST OIL SHOW....

. . . is the LOGICAL Location
for your Factory, Warehouse or Sales Office

The 10th International Petroleum Exposition—to be held in Tulsa from May 14th to 21st—will be the greatest oil show in the history of the Industry.

Although 397 Oil Industry firms had exhibits at the 1936 Exposition, a total of 492 exhibitors have already reserved space for Tulsa's 1938 Exposition. To accommodate this increase, there will be 40% more outside exhibit space—and new buildings, including permanent structures owned by exhibitors themselves, are being constructed at a cost of $250,000. Attendance at the 1938 International Petroleum Exposition will probably exceed the 1936 attendance, by 35%.

Tulsa is the LOGICAL location for the World's Greatest Oil Show, because Tulsa is the HEADQUARTERS of the Oil Industry. Here, the majority of the major oil companies, operating throughout the oil fields of the nation, —have established their operating and purchasing headquarters. The executives, engineers and purchasing agents of these major oil companies are located in Tulsa permanently. The majority of the major drilling contractors also maintain their main offices in the "World's Oil Capital".

The fact that the KEY MEN of the Oil Industry *are* permanently located in Tulsa, also makes Tulsa the LOGICAL location for your factory, warehouse or sales office. By being permanently represented in the "World's Oil Capital", you maintain—not periodic—but *day-by-day* sales contact with your best prospects and customers. This kind of salesmanship will pay *you*—just as it has paid the 94 equipment manufacturers, 93 supply companies and 250 manufacturers' agents who today are permanently located in Tulsa.

While attending the World's Greatest Oil Show, make it a point to consult the Industrial Department of the Tulsa Chamber of Commerce. We shall be glad to discuss, in detail, your own sales opportunities in the "World's Oil Capital".

1938 INTERNATIONAL PETROLEUM EXPOSITION TULSA MAY 14-21

TULSA
The Oil Capital of the World

Knowles, 3,547-66 feet, 30 bbls. Overton Refining Co. No. 2 J. T. Butts, 3,545-55 feet, 100 bbls. A. Plummer No. 10 J. A. Beall, 3,700-01 feet, 40 bbls. Roasth & Genecov No. 2 Laird, 3,538-47 feet, 20 bbls. Sells Petroleum Co. No. 7 E. Sibley, 3,580-98 feet, 90 bbls. Tide Water No. 20 Blackman, 3,638-43 feet, 60 bbls.

Rusk County—Joiner Area

T. C. Adams and others No. 7 Arnold, 3,652-3,710 feet, 50 bbls. Atlantic Refining Co. No. 12 Thompson, 3,647-3,736 feet, 108 bbls. Falls Refining Co. No. 2 D. Bradford, 3,616-50 feet, 45 bbls. W. B. Hamilton No. 21 Gambrel, 3,618-69 feet, 60 bbls. Hastings & Dodson No. 2 E. B. Alford, 3,579-3,668 feet, 60 bbls. Ohio Oil Co. No. 17 J. F. Mason, 3,629-81 feet, 40 bbls. Regent Oil Co. No. 3-A L. Harmon, 3,752-61 feet, 60 bbls. Ward Oil Co. No. 39 E. S. Thrash, 3,738-81 feet, 43 bbls.

EAST CENTRAL TEXAS COMPLETIONS

Anderson County

In the Long Lake field, Hunt Oil Co. No. 1 Broyles & Wolverton, abandoned location.

Franklin County

In the Talco field, Humble Oil & Refining Co. No. 9 Dawson, 4,160-4,316 feet, 181 bbls. per day.

Henderson County

In the Flag Lake field, DeArman-McMillan-Hunt No. 2 Dowdy, 3,086-91 feet, 417 bbls. per day.

Lamar County

Cooper Brothers No. 2 Hayes, abandoned location.

Leon County

In the Buffalo gas area, Lone Star No. 1 Melasky, 3,634-3,821 feet, 58,000,000 feet gas daily.

Titus County

In the Talco field, Humble Oil & Refining Co. No. 3 McPeters, 4,233-70 feet, 292 bbls. per day.

NORTH TEXAS COMPLETIONS

Archer County

T. H. Brown and others No. 2 Mrs. Anna Wallace, 1,802 feet, dry. Brown & Kriss No. 7 G. R. Campbell, 1,308 feet, dry. Duncan & Marchman No. 14 Andrews, 2,044 feet, dry. H. A. Schaeffer Oil Co. No. 1 W. P. Ferguson A, 3,846-91 feet, 605 bbls. Jas. Smith No. 1 J. T. Longley, 1,002 feet, dry. W. C. Young, Jr., No. 1 L. F. Wilson, 1,409 feet, dry.

Clay County

Bridwell Oil Co. No. 5 T. C. Thornberry, 1,098-1,124 feet, 50 bbls.

Cooke County

The Texas Co. No. 5 Tony Trubenbach, 789-800 feet, 45 bbls. Trumter Oil Co. No. 16 G. T. Andress, 781-98 feet, 110 bbls.

Jack County

Danciger Oil & Refining Co. No. 3 S. M. Ivey, 3,076-3,161 feet, 550 bbls. G. C. Gilmore No. 1 William Hanna, 390 feet, dry. Royal Petroleum Co. No. 1 E. Mitchell C, 3,138-50 feet, 200 bbls.

Montague County

Roy Carter and others No. 1 J. E. Lemon, 1,013 feet, dry.

Wichita County

Barton Bros. No. 3 Honaker, 278 feet, dry. Blackwell Oil & Gas Co. No. 5-D W. L. Hodges, 3,710-3,790 feet, 1,104 bbls. A. E. Blair No. 1 W. B. Honaker, abandoned location. W. H. Bohner No. 2-A First National Co., 3,619-3,860 feet, 1,100 bbls. P. Browning and others No. 2 G. W. Lewis, 3,705-90 feet, 750 bbls. Chapman & McFarlin No. 1 Mrs. Anna Mangold, 3,768-3,856 feet, 1,100 bbls. E-C Oil Co. No. 2 W. L. Hodges, 3,715-3,844 feet, 875 bbls.; No. 2 George F. Lebus, 3,758-3,834 feet, 804 bbls.; No. 1 J. F. Miller, 3,650-3,882 feet, 600 bbls. Gem Oil Co. No. 1 J. L. and T. J. Waggoner, 4,001 feet, dry. Golding & Cochran No. 15 J. L. and T. J. Waggoner, 3,775-3,854 feet, 1,250 bbls. Grace & Wood and others No. 1 W. C. Williams, 4,680 feet, dry. V. A. Huff and Bert Ligon No. 1 C. F. Collins, 4,358 feet, dry.

Kadane-Griffith Oil Co. No. 4 Mrs. Anna Mangold A, 3,659-3,742 feet, 770 bbls.; No. 1 Mrs. Anna Mangold B, 3,717-3,827 feet, 765 bbls. Melat & Graham No. 1 N. H. Martin, 3,784-3,890 feet, 1,130 bbls. Mogren & Anderson No. 2 C. A. Mertens, 900 feet, dry. E. T. Noble No. 1 K. P. Abernathy, 4,197 feet, dry. W. B. Omohundro No. 3 First National Co., 3,706-3,867 feet, 1,000 bbls. George J. Greer No. 1 S. Mitchell, 3,801-3,850 feet, 770 bbls. Perkins & Cullum No. 14 S. B. Burnett and others A, 1,509-30 feet, 275 bbls.; No. 15 S. B. Burnett and others A, 1,632 feet, dry. George Proctor and others No. 27 Ed Foster A, 3,002 feet, dry. Rowe Bros., Inc., No. 1 First National Co., 3,715-3,867 feet, 880 bbls. H. A. Schaeffer Oil Co. No. 3 First National Co., 3,650-3,837 feet, 1,200 bbls. Edwin S. Smith and others No. 1 W. T. Waggoner A, 2,018 feet, dry. Staley Oil Co. No. 2 W. P. Ferguson, 3,795-3,847 feet, 565 bbls., No. 3 First National Co., 3,700-3,880 feet, 1,010 bbls.; No. 1 R. L. Kempner, 3,778-3,840 feet, 550 bbls. The Texas Co. No. 24 First National Co., 3,611-3,845 feet, 590 bbls. Sam K. Viersen No. 1 R. L. Kempner, 3,776-3,837 feet, 1,016 bbls.

Wilbarger County

Kelly & Wheeler No. 1 W. T. Waggoner, 2,400 feet, dry. Paradise Oil Co. No. 3 W. T. Waggoner, 1,881-1,907 feet, 250 bbls.

Young County

Black Gold Oil Co. No. 1 J. S. Fisher, 3,838-3,951 feet, 367 bbls. N. B. Crenshaw No. 1 S. R. Ragland, 3,453-3,860 feet, 100 bbls. T. D. Humphrey No. 1 J. J. Butler, 3,847-3,947 feet, 3,675,000 feet of gas; No. 1 J. Duncan 3,818-3,904 feet, 21 bbls.; No. 1 A. L. Reese, 3,822-3,958 feet, 7,000,000 feet of gas. Moran & Sons No. 1 W. B. Howard, 985 feet, dry. R. G. Piper and others No. 1 S. L. Scott, 744-45 feet, 10 bbls. Post Oak Oil Co. No. 3 Lem Groves, 965 feet, dry. Sams & Watson No. 5 F. M. Cullers, 534-83 feet, 10 bbls.

Oklahoma Fields

(Continued from Page 91)

2,312 feet, total depth 2,342 feet, plugged back to 2,312 feet and pumped 20 bbls. of oil and 6 bbls. of water daily.

Charles Shock and others No. 1-B Hawkins, C W half NW NE section 16-14-11, was dry and abandoned in Wilcox sand at 2,952-63 feet.

New work in Okmulgee County: Butler No. 2-A Wagner, C NW SE section 3-14-14, was in Salt sand at 743-797 feet; Flecks Drilling Co. No. 1-A Adams, NW NE SW section 12-14-14, showed for 10 bbls. of oil at 1,066 feet, total depth, and was cleaning out; Aggas Drilling Co. No. 6 Anderson, SE NE NE section 3-15-14, location; V. W. Parks No. 1-A Stem, SE NE SW section 28-15-14, machine.

Tulsa-Muskogee Counties

S. W. Anthony No. 8 Wilcox, SE NW NW section 3-16-12, an old Tulsa County well, old total depth 1,725 feet, was fishing for 6-inch casing.

Metzger & Foltz No. 7 Johnson, SW NW NW section 10-14-18, Muskogee County, was drilling at 375 feet.

Garvin County

Samedan Oil Co. No. 1 Murray, NE NW NW section 32-1n-3w, Garvin County sector of the Tussy pool, set surface pipe and was waiting on cement to set at 60 feet.

Carter County

Phillips Petroleum Co. No. 1 Tucker, SE NW SE section 5-1s-3w, Carter County side of the Tussy pool, had Deese sand at 2,903-20 feet, total depth 2,934 feet, and pumped 135 bbls. of 24-gravity oil in 24 hours.

Skelly Oil Co. No. 3 Miller, SW NW NE section 5-1s-3w, had sand series at 2,679-3,036 feet, total depth 3,093 feet, and pumped 204 bbls. of oil daily.

George Orr and others No. 1-A Ward, SE cor. section 18-4s-2w, Hewitt pool, had Deese sand at 1,738-49 feet, total depth, and pumped 13 bbls. of oil and 12 bbls. of water daily.

Sun Oil Co. and others No. 16 Mullin A, NW NW SE section 4-4s-3w, an old Healdton well, was deepened from 2,413 feet to 3,058 feet, plugged back to 2,600 feet, drilled out to 2,642 feet and pumped 24 bbls. of oil daily.

Kewanee Oil & Gas Co. No. 28 Keck, SE NE NE section 5-4s-3w, was a machine. Gulf Oil Corp. No. 3 Berry, SE NE NW section 5-1s-3w, was a location.

Stephens County

Skelly Oil Co. No. 31 Selby, NW NW SW section 26-1s-5w, Stephens County, had Permian sand at 709-755 feet, total depth, pumped 8 bbls. of oil in eight hours and pumped off.

Magnolia Petroleum Co. No. 1 Wilson, SE SE NW NE section 34-1s-5w, an old well, was recompleted at 915 feet, total depth, for 91,000 feet of gas.

Gulf Oil Corp. No. 13 Bowers, SW cor. section 13-2s-4w, Milroy area, was completed as a 4-bbl. pumper in Pontotoc sand at 592-628 feet.

Same company's No. 14 Bowers, NW SW SW section 13-2s-4w, was a location.

Testing Big Structure in West Central Montana

Much speculation has recently arisen over possible opening of an oil and gas area in northern Lewis and Clark County, Montana, with completion of the Hanlon-Durnin well in section 11-18n-5w. This wildcat is on the newly discovered Coulmoore anticlinal structure.

The structure was discovered during the summer of 1937 by two geologists, Dr. C. C. Coulter, of Denver, and G. C. Moore, of Helena, Mont. After a month spent on field geology and mapping, it was considered to be the largest completely closed anticlinal structure in the state. The surface formation was found to be the Eagle sandstone, much of which has been eroded, with indications of the Upper Colorado shales appearing in the bottom of water wells dug and drilled by farmers on the south sector of the structure.

Doctor Coulter says the complete geologic columnar sequence may be readily traced from the Upper Montanan—Bearpaw, Judith (Two Medicine), Claggett, Eagle, and Colorado—with abundant paleontological evidence in the fossilized forms for establishing conclusive proof of age and series. He estimates that production should be reached at from 2,800 to 3,000 feet, unless an unexpected thickening of the Colorado and Kootenai might increase this depth slightly. It should not be as deep as the Cut Bank area nor as shallow as the Kevin-Sunburst producing sands.

This prospect is about 60 miles northwest of Helena, and the same distance southwest of Great Falls, Mont., and about 20 miles south of Augusta. It is over 100 miles from any producing field. It lies well away from the overthrust belt along the eastern face of the Rocky Mountains, as well as being far removed from the igneous intrusives of the Belt Range. The fold has two "highs" superimposed along a 16-mile axis, Doctor Coulter says. There nowhere appears surficial evidence of injurious faulting or dikes or sills to interfere with a complete geologic structure. A drive of approximately 100 miles completely around the periphery of the outer structure fails to show a geologic break or lapse in the continuous dip of all strata away from the central sector, with an inclination of from 15 to as much as 36 degrees from horizontal. The geologists estimate at least 42,000 acres to be well within the area of probable production within the higher closing contours, a greater area than either Salt Creek or Cut Bank.

William J. Hanlon, Cut Bank operator, has the first contract for four wells. The first test was last reported at 1,950 feet, in the Kootenai. This test is at Hogan, Mont., on the Durnin & Proctor 11,000-acre cattle ranch, about 15 miles south of Augusta on Highway 33, which bisects the field. A standard cable-tool rig, using a 140-hp. gas engine, burning 120 gallons per day, is being used. Tour is being run with three shifts.

Two additional wells will be drilled 8 and 10 miles south of the Hogan test, on the south and middle sectors of the structure, in the early spring, the locations of which have already been spotted. A paved road bisects the field, as well as a 12-inch gas line of the Montana Power Co.'s Cut Bank to Butte line. There is a fine water supply in the field.

N. Y.-Penn. Gas Fields

(Continued from Page 62)

New York State Natural Gas Co. is drilling at 2,340 feet on the S. H. English farm, Van Etten Township, Chemung County, where the top of the Tully was at 1,834 feet. In another wildcat on the C. D. Carr farm, West Union Township, Steuben County, this company is drilling at 2,015 feet.

In remaining New York tests, Wittmer and others are drilling at 315 feet on the George Caffrey farm, Greenwood Township, Steuben County; New Penn Development Corp. is shut down at 6,600 feet on the Federal Land Bank farm, Montour Township, Schuyler County, and Empire Producing Co. has the rig up and is ready to start operations on the Dan Clark farm, Willing Township, Allegany County.

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Mar. 19.—Pipe line runs in February from the Turner Valley field to the British-American and Imperial refineries at Calgary totaled 361,955 bbls., compared with 395,639 bbls. in January. The daily average was 12,927 bbls. in February compared with 12,762 bbls. in January.

Of the February deliveries, the British-American Oil Co. took 105,664 bbls. of crude and 728 bbls. of naphtha while Imperial Oil Refineries, Ltd., took 217,663 bbls. of crude and 37,900 bbls. of naphtha. Naphtha production in February was down to 1,379 bbls. a day.

Turner Valley Producers

On the Turner Valley west flank, Royalite Oil Co. No. 28, LSD 16, section 32-18-2w5, which had a natural potential between 450 and 500 bbls. from the lime at 6,949 feet showed an official potential of 620 bbls. after acid treatment. It was prorated at 260 bbls. per day.

In section 28-18-2w5, Model-Spooner-Reward No. 1, LSD 4, has pulled tubing and is producing 356 bbls. a day, through casing, with potential of 848 bbls. These completions bring the aggregate Turner Valley crude potential to 29,881 bbls. a day.

In section 32-18-2w5, West Flank Oil Co. No. 1, LSD 1, is cleaning with cable tool outfit after a shot in the lime. In section 20-18-2w5, Spy Hill Royalties No. 1, LSD 16, was shot, and is cleaning, with indications of fair production.

Tests in the Lime

In section 28-18-2w5, Richland Royalties No. 2, LSD 5, is finishing with cable tools below 6,875 feet after getting the Madison lime at 6,410 feet. It has been shooting oil over the crown block and looks like a good producer, but will be deepened to black lime around 6,910 feet.

In section 29-18-2w5, Sunburst Oil Co. No. 1, N half LSD 1, got the Madison limestone at 6,705 feet and has resumed drilling after cementing 6⅝-inch casing at 6,735 feet. Separators have been installed and tanks are being erected to handle flush production. Davies Petroleums No. 1, LSD 2, same section, is below 7,010 feet after cementing casing 10 feet in the lime at 6,908 feet. Production equipment and storage tanks have been installed.

West Flank Drilling

In section 6-19-2w5, West Central Turner Valley, East Crest Oil Co. No 4, LSD 16, is rigging. Contract has been signed with Glen Boller, drilling to commence by March 21.

In section 32-18-2w5, Royalite Oil Co. No. 30, LSD 11, is below 4,888 feet. It got the cardium sandstone marker at 4,500 feet, indicating a rise in the structure northwest of the proven crude area. West Turner Petroleums No. 1, LSD 2, is below 6,467 feet.

In section 29-18-2w5, Commoil No. 2, LSD 10, has cellar dug and is moving derrick. Snyder & Head have the drilling contract. Globe Royalties No. 1, LSD 7, is close to the cardium sandstone marker at 4,550 feet. Royalite Oil Co. No. 31, LSD 6, is below 1,187 feet. Model-Spooner-Reward No. 2, S half LSD 1, is below 5,002 feet and close to the grit beds, which were topped in No. 1 producer, a half mile east, at 4,920 feet.

In section 21-18-2w5, Barsac Royalties No. 1, LSD 12, is below 4,113 feet. Brown Oil Corp. No. 4, LSD 4, same section, is below 6,123 feet and getting close to the Madison.

Royalite Oil Co. No. 32, LSD 8, is rigging up.

In section 16-18-2w5, Royal Canadian Oil Co. No. 2, LSD 4, is drilling after setting 21½-inch surface casing at 80 feet. Okalta Oil Co. No. 7, LSD 3, is below 1,200 feet. Okalta No. 8, LSD 6, is below 900 feet.

Far South Test

In section 9-18-2w5, National Petroleum Corp. No. 2, LSD 14, is below 6,547 feet and seems likely to prove an important new extension of the field to the south. It got the Home sands at 6,450 feet, and is expected to get the Madison at less than 7,000 feet. The log disproves the belief that the formations dipped steeply to the south, precluding successful drilling; and gives encouragement to extension of drilling still farther south. The only active test at present south of National Petroleum No. 2 is Davies Petroleums No. 3, LSD 7, section 33-17-2w5, which is below 1,650 feet.

Okalta Structure

West of the proven field, Okalta Oil Co. No. 6, LSD 3, section 30-18-2w5, is below 5,200 feet. Scottish Petroleums No. 1, LSD 16, section 19-18-2w5, is below 775 feet.

North Turner Valley

In North Turner Valley, Royalite Oil Co. No. 29 Turner Basin, LSD 7, section 27-20-3w5, is below 6,867 feet, more than 592 feet in the limestone, with more porosity indicated. It will likely test for production in a few days. Home Oil Co. is preparing to start its No. 2 Millarville in LSD 6, section 33-20-3w5.

New Drilling Planned

In the south end of the field, Marine Petroleums, Ltd., will drill its No. 1 test in LSD 11, section 9-18-2w5, immediately south of National Petroleum Corp. No. 2.

R. A. Brown, Sr., president of Brown Oil Corp. and associated with a number of other active west flank companies, has announced incorporation of Producers Oil Corp., Ltd., to take over the interests of Brown, Moyer & Brown in the Royal Crest, Four Star and Three Point producing companies, the Intercity Royalties Drilling Co. and Southstream Petroleums, which holds considerable South Turner Valley acreage. The new company will drill two Turner Valley wells this spring, to be followed by two others later. The later operations may be on new structures outside Turner Valley. Brown Oil Corp. Nos. 5 and 6 will also be started this spring on the Turner Valley west flank.

Anglo-Canadian Holding & Development Co. of Calgary, headed by F. P. Byrne, is changing its name to the Anglo-Canadian Oil Co. and increasing its capital with a view to entering the field as an operating company.

East Side Drilling

On the Aldersyde structure east of Turner Valley, Ranchmen's Oil Co. No. 1, LSD 16, section 13-20-29w4, has resumed work under sponsorship of the Anglo-Canadian Holding & Development Co., with Roy Widney in charge. The well is in the upper Dalhousie formation with tools in the hole. Casing was landed some time ago at 6,263 feet where a good show of light crude was secured, with a further show of green crude at 7,170 feet. The lime contact is expected around 7,450 feet.

Green Valley Test

On the Highwood-Sinclair structure southwest of Turner Valley, Green Valley Oils No. 1 Banner, LSD 6, section 34-17-3w5, is fishing for lost tools at 5,797 feet. It is 437 feet in the Madison limestone, with some crude seepage, the bailer bringing up about 2 bbls. a day. The crude is around 34 to 35 gravity, about 10 degrees heavier than the Turner Valley crude. As soon as the tools are recovered, the production string will be cemented in the lime, and the hole deepened to completion.

Drilling in the Foothills

In the northern foothills west of Edmonton, Home Oil Co. No. 1 Brazeau, LSD 16, section 7-43-17w5, is below 1,720 feet after setting casing.

On the Birch Ridge structure, Elbow Oils No. 1, LSD 11, section 35-22-5w5, bottoming at 5,520 feet, is having samples tested to determine formation before deepening.

On the Moose dome west of Calgary, Moose Oils No. 2, finished last year in a stray sand at 1,553 feet, has resumed tank car deliveries of crude from storage at the well to Calgary. About 600 bbls. were shipped last year.

Home Oil Co. Operations

Home Oil Co., of Vancouver, British Columbia, headed by Col. Nelson Spencer, is planning for the current year an oil development in Alberta which may involve $400,000 outlay. Operations now in progress are a test on the promising Brazeau structure in the northern foothills, now down more than 1,700 feet. In this area the company controls 60,000 acres of leases, practically blanketing the structure. Plans also contemplate development in Turner Valley, where a second deep test is being started in the Millarville area on the west flank, half a mile west of No. 1 Millarville, which was abandoned late in 1937. Some drilling may be undertaken in other promising Alberta areas.

Border Fields

In the Taber field, southern Alberta, Plains Petroleum Corp. No. 3, section 25-9-17w4, got good shows at the lime contact but later developed some water. It appears to be an edge well. A decision to abandon the test has been reconsidered, and it will recement casing in the top of the limestone, around 3,435 feet, and continue with a diamond drill to about 3,700 feet for a deep test of the lime, which has never been given a thorough test in the southern plains area.

Drilling Contractors

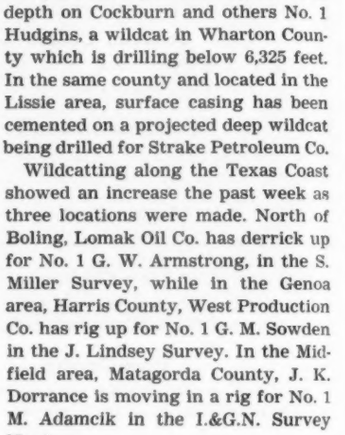
(Continued from Page 75)

Neiman-Vollmer, southeast of distillate production, is bottomed at a total depth of 7,730 feet and casing is being cemented for a production test after 32 feet of oil sand was logged at 7,685-7,730 feet. This is Frazier's second discovery. He opened production on the Hardin structure, Liberty County, in 1935 and later marked up several important extensions which forced an extensive drilling campaign.

Frank R. Flanagan received contract from John G. May for a wildcat to be drilled on the Cartwright lease in Jasper County, scheduled to be drilled to 8,000 feet.

Wynne Crosby is nearing a critical depth on Cockburn and others No. 1 Hudgins, a wildcat in Wharton County which is drilling below 6,325 feet. In the same county and located in the Lissie area, surface casing has been cemented on a projected deep wildcat being drilled for Strake Petroleum Co.

Wildcatting along the Texas Coast showed an increase the past week as three locations were made. North of Boling, Lomak Oil Co. has derrick up for No. 1 G. W. Armstrong, in the S. Miller Survey, while in the Genoa area, Harris County, West Production Co. has rig up for No. 1 G. M. Sowden in the J. Lindsey Survey. In the Midfield area, Matagorda County, J. K. Dorrance is moving in a rig for No. 1 M. Adamcik in the I.&G.N. Survey No. 1.



Here's the New MARSHALLTOWN Drilling Rig Gauge Panel

This new Marshalltown Drilling Rig Gauge Panel is portable and illuminated. It protects the gauges from the heat of the boilers, the vibration of the pumps, as well as corrosion by the elements. Live steam cannot reach the gauges because of the water leg in the piping. Test gauge connections are installed on the board. Flexible connections allow for quick installations. Stirrups provide for 2" iron pipe standards.

Ask your jobber; or write for circular to

Marshalltown Mfg. Co.
999 Nevada St.
MARSHALLTOWN, IOWA

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S.T.R.	Depth	Status
Wilshire Oil, No. 1 Gaviota, Santa Barbara	35- 5-33	2,897	br. sh. drlg.
Hancock-Bush, No. 2 Wylie, Santa Maria, S. Barbara	30-10-33	4,650	pump. 420 b.d.
Hancock-Bush, No. 3 Brown, Santa Maria, S. Barbara	25-10-34	3,684	sd. sh. drlg.
Palm Oil, No. 1 Bill, Santa Maria, Santa Barbara	27-10-34	2,660	sd. sh. drlg.
Cal. Lands, No. 3 Gallison, Santa Maria, S. Barbara	26-10-34	5,446	sd. sh. drlg.
Moore, E. H., No. 1-H Sugar, Santa Maria, S. Barbara	19-10-34	3,663	sd. sh. drlg.
Pet. Sec., No. 1 Carey, Santa Maria, Santa Barbara	27-10-34	4,660	sd. sh. drlg.
Signal Oil, No. 3 Romalho, Santa Maria, S. Barbara	27-10-34	4,183	sd. sh. drlg.
Union Oil, No. 2-V Santa Maria, Santa Barbara	21-10-34	4,986	pmp. 1,071 b.d.
Union Oil, No. 3 Le Roy, Santa Maria, Santa Barbara	24-10-35	758	sd. sh. drlg.
Union Oil, No. 2-1-0 Santa Maria, Santa Barbara	21-10-34	4,851	sd. sh. drlg.
Union Oil, No. 1 Silva, Santa Maria, Santa Barbara	24-10-35	1,760	sd. sh. drlg.
Union Oil, No. 20 Squires, Orcutt, Santa Barbara	27- 9-34	4,300	P.B. 4,240
Pet. Equities No. 1 Webber, Santa Maria, S. Barbara	27-10-34	4,039	cmtd. 4,032
Wilson Oil, No. 1-B Santa Maria, Santa Barbara	26-10-34	3,682	sd. sh. drlg.
York Oil, No. 2 Doane, Santa Maria, Santa Barbara	27-10-34	4,403	sd. sh. drlg.
Bay City Oil, No. 1-M Santa Maria, Santa Barbara	27-10-34	2,980	sd. sh. drlg.
Jones, F. E., No. 1-W Santa Maria, Santa Barbara	27-10-34	4,600	acidizing
Pac. West. Oil, No. 3-S Santa Maria, Santa Barbara	27-10-34	4,070	sd. sh. drlg.
Pima Drlg., No. 1 Morganti, Casmalia, Santa Barbara	13- 9-35	1,777	pump. water
Standard Oil, No. 1 Cat Canyon, Santa Barbara	27- 9-33	5,529	hd. sh. drlg.
Bell, A. E., No. 4 York, Lompoc, Santa Barbara	33- 8-34	3,178	P.B. 3,109
Moyle Pet., No. 1 Gato Ridge, Santa Barbara	9- 8-32	3,792	rig. to pump
Carpinteria Oil, No. 1 Carpinteria, Santa Barbara	32- 4-35	1,641	sd. sh. drlg.
Gauthier Oil, No. 1 Summerland, Santa Barbara	22- 4-26	1,310	sd. sh. drlg.
Fisher, D., No. 1 Cuyama, Santa Barbara	28-11-28	1,225	idle
Rowe, W. G., No. 1 Johnson, Oxnard, Ventura	15- 1-22	4,115	hd. sh. drlg.
High Mesa Oil, No. 1 Butcher, Ojai, Ventura	16- 4-22	1,330	hd. sd. drlg.
Texas Co., No. 5 Yale, South Mountain, Ventura	13- 3-21	2,690	redrlg. 2,454
Texas Co., No. 1 Edwards, Camarillo, Ventura	19- 2-21	6,111	fish. D.P.
Stalling & Senter, No. 1 Timber Canyon, Ventura	24- 4-21	680	idle
Section 20 Oil Co., No. 1 Sespe, Ventura	20- 5-19	1,607	idle
Condor Oil, No. 1 Dorman, Sespe, Ventura	6- 4-19	2,193	idle
C. C. M. Oil, No. 19 Hobson, Rincon, Ventura	17- 3-24	3,370	br. sh. drlg.
C. C. M. Oil, No. 20 Hobson, Rincon, Ventura	8- 3-24	4,375	O.S. drlg.
C. C. M. Oil, No. 22 Hobson, Rincon, Ventura	17- 3-24	1,997	sd. sh. drlg.
Richfield Oil, No. 6-F Rincon, Ventura	17- 3-24	3,230	redrlg. 2,241
General Pet., No. 3 Ferguson, Rincon, Ventura	8- 3-24	3,117	cleaning out
Tide Water A. O., No. 19 V.L.W., Ventura, Ventura	26- 3-23	7,000	hd. sd. drlg.
Tide Water A. O., No. 41 V.L.W., Ventura, Ventura	24- 3-23	7,350	hd. sd. drlg.
Tide Water A. O., No. 68 Lloyd, Ventura, Ventura	27- 3-23	2,497	sd. sh. drlg.
Tide Water A. O., No. 69 Lloyd, Ventura, Ventura	27- 3-23	6,950	sd. sh. drlg.
Tide Water A. O., No. 79 Lloyd, Ventura, Ventura	27- 3-23	5,005	flow. 310 b.d.
Tide Water A. O., No. 135 Lloyd, Ventura, Ventura	27- 3-23	9,520	O.S. drlg.
Tide Water A. O., No. 138 Lloyd, Ventura, Ventura	23- 3-23	9,000	O.S. drlg.
Tide Water A. O., No. 18 Hartman, Ventura, Ventura	22- 3-23	10,148	deepening
Shell Oil, No. 65 Taylor, Ventura Ave., Ventura	30- 3-23	5,920	P.B. 5,582
Shell Oil, No. 93 Taylor, Ventura Ave., Ventura	30- 3-23	8,114	flow. 3,601 b.d.
General Pet., No. 13 Notten, Ventura Ave., Ventura	28- 3-23	9,871	swabbing
Amerada Pet., No. 5 Beer, Devils Den, Kern	22-26-19	6,803	cmtd. 6,795
Par-Mex Oil, No. 1 McKittrick, Kern	6-31-22	2,064	will deepen
Rocima Oil, No. 1 Laymance, McKittrick, Kern	20-30-22	1,427	bailing
Austin, John W., No. 1 Hampshire, McKittrick, Kern	26-30-22	980	cmtd. 914
Standard Oil, No. 2 Randolph, Semi-Tropic, Kern	14-27-23	7,620	flow. 15 b.d.
Continental Oil, No. 2 KCL, Wasco, Kern	8-27-24	14,171	sd. sh. drlg.
Chico-Martinez Oil, No. 1 South Belridge, Kern	1-29-20	1,050	bailing
Ohio Oil, No. 1 Ford, South Belridge, Kern	6-29-22	2,027	cleaning out
Texas Co., No. 2-23 Theta, Lost Hills, Kern	2-26-20	1,825	O.S. drlg.
Standard Oil, No. 7 United, Lost Hills, Kern	2-26-20	1,294	will deepen
Argo Pet., No. 1 Farnsworth, Lost Hills, Kern	11-26-20	1,291	rig. to pump
Shell Oil, No. 1 Voight, Belridge, Kern	32-27-20	2,005	sd. sh. drlg.
Belridge Oil, No. 27-6 North Belridge, Kern	27-27-20	4,670	sd. sh. drlg.
Belridge Oil, No. 27-7 North Belridge, Kern	27-27-20	8,450	O.S. drlg.
Belridge Oil, No. 35-26 North Belridge, Kern	35-27-20	3,664	sd. sh. drlg.
Tide Water A. O., No. 7 Reward, No. Belridge, Kern	34-27-20	8,891	flow. 1,675 b.d.
Tide Water A. O., No. 1-21 North Belridge, Kern	21-27-20	8,633	cleaning out
Tide Water A. O., No. 2-21 North Belridge, Kern	21-27-20	8,711	flow. 615 b.d.
Richfield Oil, No. 1-A North Belridge, Kern	22-27-20	8,085	br. sh. drlg.
Richfield Oil, No. 2 North Belridge, Kern	22-27-20	2,990	sd. sh. drlg.
Texas Co., No. 3 Martin, North Belridge, Kern	22-27-20	6,974	br. sh. drlg.
General Pet., No. 1 St. Helens, Belridge, Kern	12-28-20	8,274	hd. sd. drlg.
Coast Expl., No. 1 Coffee, Round Mountain, Kern	6-28-29	1,979	O.S. drlg.
Cal-Western Oil, No. 10 Round Mountain, Kern	12-28-28	1,838	pump. 280 b.d.
Cal-Western Oil, No. 11 Round Mountain, Kern	12-28-28	512	sd. sh. drlg.
Long, Harry, No. 2 Willis, Round Mountain, Kern	2-28-28	1,715	sd. sh. drlg.
Vedder Pet., No. 2 Bell, Round Mountain, Kern	12-28-28	1,926	pump. 271 b.d.
Shell Oil, No. 5-1 Olcese, Round Mountain, Kern	22-28-29	1,764	sd. sh. drlg.
Kern River Oilfields, No. 25-1-C Kern Front, Kern	25-28-27	1,960	sd. sh. drlg.
Rubenstein, A. B., No. 1 Lerdo, Kern	20-28-27	3,369	P.B. 3,271
Dickey, H. B., No. 1 Kern River, Kern	34-28-28	290	pump. 10 b.d.
Helm & Smith, No. 2-A Kernco, Kern River, Kern	34-28-28	467	O.S. drlg.
Carter, J. P., No. 2 S.P.L., Mount Poso, Kern	3-27-28	1,473	cleaning out
Bargoi Oil, No. 2 Claflin, Mount Poso, Kern	10-27-27	1,985	sd. sh. drlg.
Framac Oil, No. 3 Brown, Mount Poso, Kern	22-27-27	1,351	reaming
Crestmont Oil, No. 1 Glide, Mount Poso, Kern	19-26-28	148	sd. sh. drlg.
Ring Oil, No. 6 Bowles, Mount Poso, Kern	29-26-28	1,785	rig. to pump
Western Gulf Oil, No. 33 KCL, Fruitvale, Kern	22-29-27	3,968	P.B. 3,872
Wood Callahan Oil, No. 21-2 Edison, Kern	21-30-29	3,675	P.B. 3,285
Wood Callahan Oil, No. 1 Porter, Edison, Kern	20-30-29	3,570	sd. sh. drlg.
Union Oil, No. 1 Berry, Arvin, Kern	15-31-29	4,810	sd. sh. drlg.
Superior Oil, No. 1 Wagner, Rio Bravo, Kern	35-28-25	11,265	flow. 730 b.d.
Superior Oil, No. 2 Wagner, Rio Bravo, Kern	35-28-25	10,670	sd. sh. drlg.
Superior Oil, No. 1 Geissinger, Rio Bravo, Kern	32-28-25	10,868	sd. sh. drlg.
Superior Oil, No. 1 Ruhl, Rio Bravo, Kern	1-29-25	10,476	sd. sh. drlg.
Union Oil, No. 2-34 KCL, Rio Bravo, Kern	34-28-25	11,205	br. sh. drlg.
Getty Oil, No. 1 Ramsey, Rio Bravo, Kern	35-28-25	9,360	sd. sh. drlg.
General Pet., No. 1 Wagoner, Rio Bravo, Kern	35-28-25	8,991	sd. sh. drlg.
Standard Oil, No. 18-1 KCL, Una, Kern	29-28-26	2,070	sd. sh. drlg.
Shell Oil, No. 58-A KCL, Bellevue, Kern	29-29-27	6,290	gr. sd. drlg.
Continental Oil, No. 1-D KCL, Greeley, Kern	10-30-36	8,051	gr. sd. drlg.
Superior Oil, No. 9 KCL, Greeley, Kern Co.	3-30-26	7,870	form. test
Standard Oil, No. 1 Calder Klassen, Greeley, Kern	20-29-26	7,794	P.B. 7,750
Standard Oil, No. 2 Fleishauer, Greeley, Kern	20-29-26	7,790	sd. sh. drlg.
Standard Oil, No. 11-8 KCL, Greeley, Kern	20-29-26	10,360	gr. sd. drlg.
Standard Oil, No. 11-12 KCL, Greeley, Kern	20-29-26	7,902	redrlg. 7,896
Standard Oil, No. 11-13 KCL, Greeley, Kern	20-29-26	7,739	O.S. drlg.
Standard Oil, No. 12-4 KCL, Greeley, Kern	16-29-26	8,010	gr. sd. drlg.
Shell Oil, No. 76-1-B KCL, Greeley, Kern	16-29-26	3,181	sd. sh. drlg.
Shell Oil, No. 8-29-A KCL, Ten Section, Kern	29-30-26	8,220	O.S. drlg.
Shell Oil, No. 41-29-A KCL, Ten Section, Kern	29-30-26	4,996	sd. sh. drlg.
Shell Oil, No. 41-32-B KCL, Ten Section, Kern	32-30-26	8,216	flow. 2,424 b.d.
Shell Oil, No. 25-30-B KCL, Ten Section, Kern	30-30-26	2,364	sd. sh. drlg.
Shell Oil, No. 81-31-B KCL, Ten Section, Kern	31-20-26	7,592	sd. sh. drlg.
Shell Oil, No. 2-13-A KCL, Canal, Kern	13-30-25	5,922	sd. sh. drlg.
Ohio Oil, No. 5-E Canal, Kern	14-30-25	7,248	sd. sh. drlg.
Ohio Oil, No. 8-A KCL, Buena Vista Lake, Kern	32-31-26	8,404	cleaning out
Richfield Oil, No. 1 M.C., Midway-Sunset, Kern	24-31-22	2,560	bailing
C. C. M. Oil, No. 4 Tumbador, Midway-Sunset, Kern	24-31-22	2,430	sd. sh. drlg.
Berry Oil, No. 22 Midway-Sunset, Kern	28-12-24	970	sd. sh. drlg.
Chemeketa Oil, No. 1 Midway-Sunset, Kern	15-32-23	2,355	idle
Standard Oil, No. 35-23-D Midway-Sunset, Kern	23-32-24	3,500	swabbing
Victor Oil, No. 14 Midway-Sunset, Kern	35-32-23	3,201	br. sh. drlg.
Formax Oil, No. 22 Midway-Sunset, Kern	36-32-23	1,793	pump. 147 b.d.
Hoyt, Otis, No. 9 Sunset, Midway-Sunset, Kern	7-11-23	1,519	flow. 80 b.d.
National Oil, No. 17 Midway-Sunset, Kern	35-32-23	2,065	O.S. drlg.
Texas Co., No. 1 Pioneer, Midway-Sunset, Kern	33-11-23	7,478	br. sh. drlg.
Petrol Corp., No. 1 Tejon, Kern	32-11-19	6,022	dry; abd.
Universal Consd., No. 1 Tejon, Kern	33-11-19	4,634	pump. 90 b.d.
Shell Oil, No. 4-26 KCL, San Emidio, Kern	26-11-22	7,670	fish. D.P.
Pure Oil, No. 1 SPL, Cantua, Fresno	31-18-18	10,801	br. sh. drlg.
Superior Oil, No. C.U.P., Fresno	20-16-13	5,795	sd. sh. drlg.
Jacalitos Oil, No. 1 Jacalitos, Fresno	14-21-15	5,870	idle
Pet. Sec., No. 2 Gatchell, Jacalitos, Fresno	18-20-16	6,591	gr. sh. drlg.
Shell Oil, No. 36-1 Italo, Coalinga, Fresno	36-19-14	2,897	sd. sh. drlg.
K. N. D. A., No. 67-20-J Kettleman North, Fresno	20-21-17	10,003	hd. sd. drlg.
K. N. D. A., No. 72-4-P Kettleman North, Fresno	4-22-17	8,275	hd. sh. drlg.
K. N. D. A., No. 6-6-Q Kettleman North, Kings	6-22-18	8,960	P.B. 8,189

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtr., or St. sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting for cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shutoff O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

K. N. D. A., No. 6-8-Q Kettleman North, Kings	8-22-18	6,490	br. sh. drlg.
K. N. D. A., No. 38-8-Q Kettleman North, Kings	8-22-18	5,798	hd. sh. drlg.
K. N. D. A., No. 58-16-Q Kettleman North, Kings	16-22-18	5,161	sd. sh. drlg.
K. N. D. A., No. 47-18-Q Kettleman North, Kings	18-22-18	6,995	br. sh. drlg.
K. N. D. A., No. 43-20-Q Kettleman North, Kings	20-22-18	1,984	sd. sh. drlg.
Standard Oil, No. 27-21-J Kettleman North, Fresno	21-21-17	10,695	br. sh. drlg.
Standard Oil, No. 58-33-J Kettleman North, Fresno	33-21-17	6,470	br. sh. drlg.
Standard Oil, No. 2-11-P Kettleman North, Kings	11-22-17	7,850	flow. salt wtr.
Standard Oil, No. 87-1-P Kettleman North, Kings	1-22-17	6,484	sd. sh. drlg.
Standard Oil, No. 21-13-P Kettleman North, Kings	13-22-17	7,284	redrlg. 7,180
Standard Oil, No. 21-7-Q Kettleman North, Kings	7-22-18	7,370	br. sh. drlg.
Standard Oil, No. 74-7-Q Kettleman North, Kings	7-22-18	2,185	sd. sh. drlg.
Standard Oil, No. 85-7-Q Kettleman North, Kings	7-22-18	6,040	sd. sh. drlg.
Bandini Pet., No. 5 Whepley, Kettleman No., Fresno	35-21-17	9,551	br. sh. drlg.
Pyramid Prod., No. 1 Kettleman Plains, Kings	27-24-18	2,996	sd. sh. drlg.
Standard Oil, No. 2 Weyl, McDonald Is., San Joaquin	25- 2-4	8,810	bridge 5,274
Turener, L. E., No. 1 Glaze, Pixley, Tulare	15-22-26	2,802	cleaning out
Wilshire Oil, No. 1 Cowell, Half Moon Bay, San Mateo	20- 6-5	8,050	br. sh. drlg.
Amerada Pet., No. 1 Mayhood, Rio Vista, Solano	36- 4-2	2,871	sd. sh. drlg.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S.T.R.	Depth	Status
Sovereign Oil, No. 1 El Segundo, Los Angeles	12- 3-15	7,226	Schist drlg.
Termo Co., No. 2 El Segundo, Los Angeles	12- 3-15	7,400	rig compressor
Wilshire Oil, No. 1 Const., El Segundo, Los Angeles	12- 3-15	7,408	cmtd. fish
Rolling Hills Pet., No. 1 Palos Verdes, Los Angeles	27- 2-14	4,218	br. sh. drlg.
Patton, C. B., No. 1 Meacham, Torrance, Los Angeles	15- 4-14	5,032	P.B. 4,975
Patton, C. B., No. 2 Neill, Torrance, Los Angeles	14- 4-14	3,747	cleaning out
McCaslin, W. E., No. 2 Torrance, Los Angeles	14- 4-14	4,980	sd. sh. drlg.
Torrance Oil, No. 1 Grubb, Torrance, Los Angeles	14- 4-14	3,673	cleaning out
Sol Oil, No 1 Torrance, Torrance, Los Angeles	23- 4-14	3,825	cleaning out
Anderson, N. H., No. 2 Torrance, Los Angeles	14- 4-14	5,051	will P.B.
Emerald Oil, No. 1 fee, Torrance, Los Angeles	23- 4-14	5,120	redrlg.
Camp, C. W., No. 1 Perkins, Torrance, Los Angeles	23- 4-14	5,020	pump. 160 b.d.
Camp, C. W., No. 12 Torrance, Los Angeles	23- 4-14	3,780	rigging up
Doyle Pet., No. 1 Bond, Torrance, Los Angeles	23- 4-14	4,890	sd. sh. drlg.
Doyle Pet., No. 1 Neill, Torrance, Los Angeles	14- 4-14	4,750	sd. sh. drlg.
Elyod Oil, No. 1 Post, Torrance, Los Angeles	14- 4-14	3,774	P.B. 720
Peso Oil, No. 1 Marcoux, Torrance, Los Angeles	23- 4-14	3,782	cleaning out
Star Pet., No. 1 G & A, Torrance, Los Angeles	23- 4-14	1,150	cleaning out
Williams & Co., No. 1 Torrance, Los Angeles	14- 4-14	3,795	redrlg. 1,351
Woolner Oil, No. 1 Torrance, Los Angeles	14- 4-14	3,780	rebldg. rig
Krause & Baker, No. 2 Gladys, Torrance, Los Angeles	14- 4-14	3,795	rebldg. rig
Pilgrim Oil, No. 1 P. & Q., Torrance, Los Angeles	14- 4-14	3,800	redrlg. 3,596
Pilgrim Oil, No. 2 Getty, Torrance, Los Angeles	23- 4-14	3,780	cleaning out
Texas Co., No. 5 Redondo, Torrance, Los Angeles	15- 4-14	3,442	redrlg. 3,198
Texas Co., No. 3 Wilson, Torrance, Los Angeles	15- 4-14	4,377	sd. sh. drlg.
Wilson, R. K., No. 1 Cook, Torrance, Los Angeles	14- 4-14	3,770	rigging up
South. Cal. Drlg., No. 1 Hough, Torrance, Los Angeles	14- 4-14	3,780	will deepen
M. & M. Oil, No. 6 Lomita, Torrance, Los Angeles	23- 4-14	5,130	pump. 115 b.d.
Superior Oil, No. 5 Torrance, Los Angeles	16- 4-14	4,959	sd. sh. drlg.
Imperial Gypsum, No. 1-C Torrance, Los Angeles	14- 4-14	3,750	rigging up
Lakeside Oil, No. 1 Cook, Torrance, Los Angeles	14- 4-14	3,996	sd. sh. drlg.
Coast Line Oil, No. 1 McBride, Torrance, Los Angeles	14- 4-14	4,971	sd. sh. drlg.
C. C. M. O., No. 14 Torrance, Los Angeles	14- 4-14	3,897	hd. sh. drlg.
C. C. M. O., No. 23 Torrance, Los Angeles	16- 4-14	3,770	cleaning out
Fisher, N., No. 1 Watkins, Torrance, Los Angeles	23- 4-14	5,150	bailing
Fisher, N., No. 1 Washburn, Torrance, Los Angeles	23- 4-14	5,175	P.B. 5,147
Berken Oil, No. 1 Star, Torrance, Los Angeles	16- 4-14	3,758	rigging up
Shell Oil, No. 94 Reyes, Dominguez, Los Angeles	33- 3-13	1,984	sd. sh. drlg.
Union Oil, No. 58 Callender, Dominguez, Los Angeles	33- 3-13	6,791	sd. sh. drlg.
Union Oil, No. 59 Callender, Dominguez, Los Angeles	33- 3-13	6,397	sd. sh. drlg.
Union Oil, No. 60 Callender, Dominguez, Los Angeles	33- 3-13	6,284	sd. sh. drlg.
Barnsdall Oil, No. 20 O'Dea, Rosecrans, Los Angeles	18- 3-13	5,997	sd. sh. drlg.
Union Oil, No. 18-R Rosecrans, Los Angeles	18- 3-13	7,630	scrape hole
Universal Consd., No. 2 Trust, Rosecrans, Los Angeles	18- 3-13	6,582	sd. sh. drlg.
Barnsdall Oil, No. 3 S. F. Newhall, Los Angeles	26- 4-17	976	sd. sh. drlg.
General Pet., No. 38 Ford, Wilmington, Los Angeles	4- 5-13	2,597	O.S. drlg.
General Pet., No. 39 Ford, Wilmington, Los Angeles	4- 5-13	2,700	O.S. drlg.
General Pet., No. 3-1 C.C., Wilmington, Los Angeles	4- 5-13	2,980	O.S. drlg.
General Pet., No. 3-5 C.C., Wilmington, Los Angeles	2- 5-13	3,310	flow. 2,385 b.d.
General Pet., No. 5 Harbor, Wilmington, Los Angeles	2- 5-13	3,900	flow. 2,410 b.d.
General Pet., No. 9 Harbor, Wilmington, Los Angeles	2- 5-13	3,025	flow. 470 b.d.
General Pet., No. 15 Harbor, Wilmington, L. Angeles	2- 5-13	2,184	sd. sh. drlg.
General Pet., No. 4-S.P., Wilmington, Los Angeles	2- 5-13	3,961	O.S. drlg.
Allied Pet., No. 27 Wilmington, Los Angeles	2- 5-13	2,633	sd. sh. drlg.
Bankline Oil, No. 3-U.P., Wilmington, Los Angeles	3- 5-13	2,413	cmtd. 2,378
Bankline Oil, No. 6-U.P., Wilmington, Los Angeles	2- 5-13	2,140	sd. sh. drlg.
Baker Oil, No. 1 Wilmington, Los Angeles	35- 4-13	3,078	cmtd. 3,077
Caminol Co., No. 2-7-H Wilmington, Los Angeles	2- 5-13	3,190	P.B. 2,980
Dunlap Oil, No. 11 Wilmington, Los Angeles	2- 5-13	2,460	sd. sh. drlg.
Hogan Pet., No. 1 Graham, Wilmington, Los Angeles	2- 5-13	2,945	O.S. drlg.
Hancock Oil, No. 3-A Wilmington, Los Angeles	2- 5-13	3,726	O.S. drlg.
Hancock Oil, No. 5-A Wilmington, Los Angeles	3- 5-13	2,595	O.S. drlg.
Hancock Oil, No. 9-B Wilmington, Los Angeles	2- 5-13	2,163	sd. sh. drlg.
Hancock Oil, No. 6-E Wilmington, Los Angeles	2- 5-13	4,023	flow. 6,250 b.d.
Kreiger Oil, No. 2 K.W., Wilmington, Los Angeles	32- 4-13	2,141	sd. sh. drlg.
L. B. Harbor Oil, No. 2-CC, Wilmington, Los Angeles	2- 5-13	3,790	flow. 6,500 b.d.
Pongratz, Gus, No. 2-C Wilmington, Los Angeles	32- 4-13	3,659	recmtd. 3,628
Richfield Oil, No. 1-G Wilmington, Los Angeles	2- 5-13	6,078	sd. sh. drlg.
Richfield Oil, No. 2-R.O., Wilmington, Los Angeles	2- 5-13	3,026	O.S. drlg.
Richfield Oil, No. 3-R.O., Wilmington, Los Angeles	2- 5-13	1,974	sd. sh. drlg.
Richfield Oil, No. 1-P.G., Wilmington, Los Angeles	2- 5-13	1,974	sd. sh. drlg.
Richfield Oil, No. 4-P.G., Wilmington, Los Angeles	2- 5-13	2,362	sd. sh. drlg.
Richfield Oil, No. 1-W.E., Wilmington, Los Angeles	2- 5-13	697	sd. sh. drlg.
Royalty Serv., No. 6 Nelson, Wilmington, L. Angeles	33- 4-13	2,515	sd. sh. drlg.
Superior Oil, No. 1 Seaside, Wilmington, Los Angeles	4- 5-13	2,272	sd. sh. drlg.
Superior Oil, No. 2 B.B., Wilmington, Los Angeles	4- 5-13	2,684	sd. sh. drlg.
Superior Oil, No. 3 B.B., Wilmington, Los Angeles	4- 5-13	2,581	sd. sh. drlg.
Superior Oil, No. 2 Ocean Front, Wilmington, L. Ang.	2- 5-13	2,060	sd. sh. drlg.
Texas Co., No. 2 Ref., Wilmington, Los Angeles	32- 4-13	3,472	gravel pack
Termo Co., No. 1-D Wilmington, Los Angeles	3- 5-13	2,350	sd. sh. drlg.
Termo Co., No. 2-D Wilmington, Los Angeles	3- 5-13	2,350	sd. sh. drlg.
Union Pacific, No. 50 Wilmington, Los Angeles	34- 4-13	2,281	sd. sh. drlg.
Union Pacific, No. 51 Wilmington, Los Angeles	34- 4-13	3,986	O.S. drlg
Union Pacific, No. 70 Wilmington, Los Angeles	34- 4-13	4,025	O.S. drlg.
Union Pacific, No. 71 Wilmington, Los Angeles	34- 4-13	4,045	O.S. drlg.
Union Pacific, No. 72 Wilmington, Los Angeles	34- 4-13	3,650	O.S. drlg.
Union Pacific, No. 83 Wilmington, Los Angeles	3- 5-13	2,093	sd. sh. drlg.
Universal Consd., No. 2 Newport, Wilmington, L. Ang.	2- 5-13	3,851	O.S. drlg.
W. G. Oil, No. 1-A LBHD, Wilmington, Los Angeles	3- 5-13	3,885	flow. 4,500 b.d.
W. G. Oil, No. 2-A LBHD, Wilmington, Los Angeles	3- 5-13	3,887	flow. 6,500 b.d.
W. G. Oil, No. 3-A LBHD, Wilmington, Los Angeles	3- 5-13	3,887	flow. 6,200 b.d.
W. G. Oil, No. 4-A LBHD, Wilmington, Los Angeles	3- 5-13	3,887	flow. 6,450 b.d.
Johnston Drlg., No. 1 Pico, Montebello, Los Angeles	5- 2-11	3,799	sd. sh. drlg.
St. Helens Pet., No. 24-M Montebello, Los Angeles	2- 2-12	5,377	sd. sh. drlg.
St. Helens Pet., No. 25-M Montebello, Los Angeles	2- 2-12	4,290	sd. sh. drlg.
Union Oil, No. 1 Paul Howard, Montebello, L. Angeles	2- 2-12	4,286	sd. sh. drlg.
McVicar & Rood, No. 1 Manz, Montebello, Los Angeles	2- 2-12	3,729	redrlg. 3,060
Hilldon Oil, No. 2 North Long Beach, Los Angeles	13- 4-13	4,090	O.S. drlg.
Signal Oil, No. 1 P.E., North Long Beach, L. Angeles	13- 4-13	1,985	hd. sd. drlg.
Abrams, John, No. 1 Flood Control, Los Angeles	13- 4-13	4,632	will test
Kramlidon Oil, No. 1 Long Beach, Los Angeles	13- 4-13	5,010	sd. sh. drlg.
Marvell Oil, No. 1 Long Beach, Los Angeles	19- 4-12	1,653	sd. sh. drlg.
Powers, E. D., No. 3 Long Beach, Los Angeles	20- 4-12	4,303	pump. 25 b.d.
Shell Oil, No. 1 Goddard, Long Beach, Los Angeles	19- 4-12	3,520	C.P. 2,850
Richfield Oil, No. 4-B Long Beach, Los Angeles	13- 4-13	4,225	sd. sh. drlg.
Yunker, C. F., No. 2 Barbara, Long Beach, L. Angeles	19- 4-12	1,993	sd. sh. drlg.
Union Oil, No. 100 Santa Fe Springs, Los Angeles	6- 3-11	9,945	flow. O. & W.
W. P. R. Oil, No. 3 Huntington, Orange	35- 5-11	7,410	cmtd. 7,410
Brea Canyon Oil, No. 48 Brea Canyon, Orange	2- 3-10	1,202	cmtd. 1,200
Standard Oil, No. 127 Murphy, West Coyote, Orange	18- 3-10	3,240	cmtd. 3,224
Standard Oil, No. 2 Bastanchury, W. Coyote, Orange	21- 3-10	4,047	sd. sh. drlg.
Standard Oil, No. 65 Emery, West Coyote, Orange	24- 3-11	1,976	sd. sh. drlg.
Standard Oil, No. 2-12 Coyote, East Coyote, Orange	22- 3-10	2,698	sd. sh. drlg.
Bartholomae Oil, No. 6 Sterns, East Coyote, Orange	22- 3-11	2,173	sd. sh. drlg.
Standard Oil, No. 2-26 Kraemer, Richfield, Orange	32- 3-9	4,550	O.S. drlg.
Pearl, J., Oil, No. 1 Dobashi, Yorba, Orange	21- 3-9	1,205	idle
Oliver & Owen, No. 1 Anderson, Yorba, Orange	22- 3-9	1,330	hd. sd. drlg.
Beth Pet., No. 1 Pickering, Yorba, Orange	22- 3-9	2,311	tested wet
Mid-Cal Oil, No. 1 Sloan, Yorba, Orange	22- 3-9	387	sd. sh. drlg.
Brown & Co., No. 1 Hurley, Yorba, Orange	22- 3-9	1,775	O.S. drlg.

KANSAS

Week Ending March 19 (Descriptions are East unless marked otherwise)

Barber County

Carter Oil Co. et al No. 1 Ely, C NE NW sec. 6-32-14w. Cg. 4,730 ft.
Palmer Oil Corp. et al No. 1 Warwick, C NW sec. 29-31-10w. R.U.S.T. 4,787 ft.

Barton County

Crown Oil Co. No. 1 Schartz, NW sec. 7-20-11w. Drlg. 2,480 ft.
R. E. Day et al No. 1 Felts, SE SE NE sec. 14-16-12w. S.D. 1,875 ft.
Murfin et al No. No. 1 Rexroot, NW SE sec. 14-17-13w. Drlg. 580 ft.
C. L. Price No. 1 Hammeke, NE NE SW sec. 12-18-12w. Sil. 3,415-27 ft.; T.D. 3,433 ft.; P.B. 3,429 ft.; est. 20 B.O. P.D. and 2 B.W.
Price et al No. 1 Wondra, NW NE sec. 10-17-13w. Drlg. 800 ft.
Sinclair Prairie Oil Co. No. 1 Frederick, SW SW SE sec. 16-16-11w. Drlg. 3,200 ft.

Butler County

T. S. Dustin No. 1 Miley, SE NW NE sec. 17-27-5e. S.D. 810 ft.
Saco Oil Co. et al No. 1 Pettit, SW NW SW sec. 21-28-6. Drlg. 1,650 ft.

Chase County

T. D. Duffy No. 1 Leedy, NE NW NW sec. 26-22-9. S.D. 1,515 ft.

Clark County

Olson Oil Co. et al No. 1 Watkins, SW NW sec. 23-32-21w. T.D. 7,136 ft.; D. &A.

Cowley County

Bess & Gralapp et al No. 1 Hunt, CNL NE NW sec. 18-34-5e. Drlg. 600 ft.
Arthur Brewer No. 1 Clark, NE SE NW sec. 6-31-4. Bville. 2,860-70 ft.; T.D. 2,874 ft.; swb. 28 B.O. in 8 hrs.
Arthur Brewer No. 1 McDaniels, SW cor. sec. 24-30-4e. Drlg. 820 ft.
Earl Wakefield No. 1 White, NW NE sec. 4-33-4e. Drlg. 2,045 ft.

Dickinson County

Fred Franks et al No. 1 Huffman, NW NW SW sec. 11-13-1e. B.R.

Ellis County

Carter Oil Co. No. 1 Foster, SE NW sec. 1-15-16w. Drlg. 2,940 ft.
Colonial Oil Co., Trott et al No. 1 Hadley, SE NE SE sec. 12-11-8w. T.D. 3,146 ft.; sqze. job.
Hays & Sackrider No. 1 Windholtz, NE cor. sec. 2-13-16w. T.D. 3,242 ft.; 1,400 ft. O.I.H.; acd.
Twin Drlg. Co. et al No. 1 Hall, NW SW NE sec. 1-12-17w. Drlg. 2,688 ft.

Ellsworth County

Colonial Oil Co. No. 1 Hagy, NW cor. sec. 16-16-10w. Pay 3,340-42 ft., T.D.; pot. 1,219 B.O.; comp.
Ralph Wixson et al No. 1 Peterman, SW cor. sec. 28-17-10w. T.D. 3,306 ft.; P.B. 3,300 ft.

Finney County

Atlantic Ref. Co. No. 1 Nunn, C SE NE sec. 27-21-34w. Drlg. 3,831 ft.

Graham County

Continental Oil Co. and Cities Service Oil Co. No. 1 Morel, C W½ E½ NE sec. 15-9-21w. Drlg. 3,440 ft.

Greenwood County

Landon & Mendenhall No. 1 Slough, NE SW sec. 9-24-13e. Drlg. 1,890 ft.
C. C. Whitaker et al No. 1 Bressner, NW SE sec. 8-26-13e. S.D. 750 ft.

Harper County

Franklin Drlg. Co. No. 1 Waits, NE SW sec. 24-34-6w. Drlg. 4,765 ft.

Jewell County

Hollingsworth Bros. No. 1 Wolfe, NE SW SE sec. 14-4s-8w. S.D. 100 ft.

Lane County

Phillips Pet. Co. No. 1 Kees, C SE SE sec. 3-19-30w. T.D. 4,911 ft.; W.O.C.

McPherson County

Darrah et al No. 1 Decker, SW SW SE sec. 12-21-2w. T.D. 3,056 ft.; killed gas; C.O.

Meade County

Barnett et al No. 1 Adams, NW SE sec. 22-34-30w. S.D. 69 ft.
Bryan & West No. 1 Brown, NE SW sec. 5-33-27w. Spd. and S.D.

Ness County

Marshall Drlg. Co. et al No. 1 Anderson, SW NW sec. 23-16-24w. Spd. and S.D.
Trojan O. & G. Co. No. 1 Moses, C SW NW sec. 10-18-25w. S.D. 500 ft.
Trojan O. & G. Co. No. 1 Page Milling Co., SE SE NW sec. 36-18-26w. C.O. 3,270 ft.

Pratt County

Cities Service Oil Co. No. 1 Delaney, CNL S½ NE sec. 13-26-12w. Arb. 4,317 ft.; T.D. 4,347 ft.; D.&A.

Reno County

Amerada Pet. Corp. and Westgate-Greenland Oil Co. No. 1 Johns, SE cor. sec. 25-22-5w. Fsg. 3,320 ft.
Carey et al No. 1 McPheeters, NE NW sec. 22-26-8w. Drlg. 3,720 ft.
Cities Service Oil Co. No. 1 Krele, C NW sec. 27-23-10w. Arb. 3,975 ft.; T.D. 4,005 ft.; D.&A.
McCole et al No. 1 Mathews, SW NW NW sec. 15-24-10w. Set 8-in. 2,591 ft.; U.R. 3,188 ft.

Rice County

Marylyn Oil Co. et al No. 1 Vincent, NW NW NE sec. 5-21-10w. M.I.M.
Price et al No. 1 Gemeinhardt, NE SE sec. 18-18-10w. T.D. 3,305 ft.; P.B. 3,298 ft.; acd.
Sam Schneider et al No. 1 Sterling College, SE SW SE sec. 28-20-8w. Arb. 3,476 ft.; T.D. 3,482½ ft.; D.&A.

Rooks County

Duwe & Farris No. 1 Hancock, NW SW SW sec. 21-10-18w. T.D. 3,709 ft.; D. &A.
Graham et al No. 1 Fike, SW cor. sec. 9-9-17w. C.O. 3,384 ft.
Producers Oil Co. No. 1 Ham, SW SW NW sec. 25-7-19w. Set 12-in. 312 ft. (cor.); S.D. 330 ft.

Russell County

Gulf Oil Corp. No. 1 Punker, C E½ NW SW sec. 22-15-12w. Set 12-in. 428 ft.; W.O.C. 440 ft.
Jones & Shelbourne et al No. 1 Kuhnle, SE NW sec. 4-15-12w. Drlg. 2,610 ft.
Parks et al No. 1 Gorham Est., SW NW sec. 19-15-15w. Drlg. 2,420 ft.
Simpson et al No. 1 Boxberger, NE SE NW sec. 10-15-14w. Drlg. 2,525 ft.
G. A. Stearns et al No. 1 Stielow, NW cor. sec. 32-11-14w. S.D. 2,254 ft.

Sedgwick County

Frank Hudson et al No. 1 Fulton, NE SE sec. 35-28-1e. S.D. 1,738 ft.
McKnab No. 1 Garrett, SE SW SW sec. 18-29-2e. Drlg. 2,760 ft.
Union O. & R. Co. et al No. 1 Howell, SW cor. sec. 6-29-1e. Set 10-in. 2,298 ft.; drlg. cmt.

Stafford County

Cardinal Oil Co. et al No. 1 Fischer, SW NW SW sec. 31-21-12w. Cellar.
Continental Oil Co. et al No. 1 Fair, CNL SW sec. 12-25-13w. Drlg. 3,658 ft.
Continental Oil Co. and Phillips Pet. Co. No. 1 Curtis, SE cor. sec. 26-24-13w. B.R.R.
Fain Drlg. Co. et al No. 1 Hughes, SE sec. 13-23-12w. Arb. 3,787 ft.; T.D. 3,802 ft.; D.&A.
National Ref. Co. No. 1 Bonham, SW SE sec. 28-25-12w. Drlg. 4,145 ft.
Pryor & Lockhart No. 1 De Selms, NE sec. 3-25-11w. Drlg. 1,000 ft.
Fred Rust et al No. 1 Krankenberg, SW cor. sec. 20-22-12w. Arb. 3,829 ft.; T.D. 3,842 ft.; D.&A.
Stanolind O. & G. Co. No. 1 Hahn, NE

NW sec. 14-22-13w. Pay 3,759-63 ft.; pot. 452 B.O.; comp.

Sumner County

Hapenny et al No. 1 Evers, SE SE NE sec. 27-31-2e. O.W.D.D.; C.O. 1,519 ft.
Saco Oil Co. et al No. 1 Phipps, SW SE NE sec. 24-30-1w. Set surf. csg.
Shawver and Pryor & Lockhart et al No. 1 McKowen, SW cor. sec. 18-32-1w. Surf. csg.

Trego County

Carlock No. 1 Kinzel, SW SW sec. 9-13-22w. Spd. and S.D.
Manning & Martin No. 1 Lynd, NW SW sec. 16-11-21w. Drlg. 3,535 ft.

Woodson County

Union O. & R. Co. No. 1 Laidlow, CEL NW SW sec. 35-25-15e. Miss. 1,397-1,400 ft.; T.D. 1,404 ft.; S.O.

OKLAHOMA

Week Ending March 19

NORTHERN OKLAHOMA

Beckham County

Mid-American Oil Co. No. 1-A Biscoe, SW cor. sec. 28-8-22w. Drlg. 2,697 ft.

Cleveland County

W. A. Delaney et al No. 1 Bugher, SE SE SW sec. 12-7-2w. Drlg. 1,790 ft.

Comanche County

Clyde Roach No. 1-A Green, SE SE SW sec. 2-1n-13w. Drlg. 670 ft.

Creek County

M. W. Mosier et al No. 1 Holcomb, SE SW NW sec. 19-18-8. T.D. 3,018 ft.; 2,000 ft. W.I.H. and S.S.O.; S.D.

Garfield County

H. R. Hollenback et al No. 1 Clark, NW cor. sec. 34-21-6w. Second Wilcox 7,298 ft.; T.D. 7,336 ft.; flwd. 218 B.O. in 24 hrs.; aed.

Garvin County

B. C. D. Edwards No. 1 Clark, NE cor. sec. 16-3n-3e. T.D. 2,676 ft.; P.B. 2,088 ft.; perf.; swb. 6 bbls. fluid in 1 hr.; est. half wtr.; R.U.S.T.

Grady County

Doyle Pet. Co. No. 1 Huffine, NW NW SE sec. 30-5-8w. Drlg.
Gulf Oil Corp. No. 1 Thomas, SW NW NW sec. 14-4-5w. Drlg. 11,250 ft.

Greer County

J. A. Everitt No. 1 Graumann, NE NW NW sec. 11-5-21w. Drlg. 445 ft.
R. W. McDonald No. 1 Fite, SE SE sec. 34-7-21w. T.D. 1,114 ft.; H.F.W.; S.D.
J. I. Medlin et al No. 1 Broudie, NW cor. sec. 5-6n-20w. T.D. 90 ft.; (cor.); S.D.

Hughes County

Amerada Pet. Corp. and Stanolind O. & G. Co. No. 1 Martin, NW NE NE sec. 6-9-9. Drlg. 3,167 ft.
Amerada Pet. Corp. and Stanolind O. & G. Co. No. 1 Preame, NW NW SE sec. 29-9-9. Drlg. 3,955 ft.
Homer Doup et al No. 1 Bank, NE NE NW sec. 7-7-9. S.D. 335 ft.
E. H. Moore et al No. 1 Hunter, NE NE NW sec. 30-4-9. Drlg. 2,838 ft.
Phillaine Oil Co. No. 1 Morrison, SE SE SW sec. 13-8-10. T.D. 150 ft.; M.I.T.
Phillips Pet. Co. No. 1 Becker, NE NW SW sec. 8-5-10. T.D. 6,286 ft.; plug. 5,612 ft.; drld. out to 5,660 ft.; flwd. 75 B.O. in 22 min.
Troup & Strickland No. 1 Brown, NW SW NE sec. 32-6-8. S.D. 660 ft.

Kay County

J. R. Pierse No. 1 Hannon, SE cor. sec. 26-28-2e. T.D. 2,000 ft.; S.D.
E. J. Shaffer et al No. 1 McKee, NE NW sec. 20-28-1w. T.D. 2,500 ft.; S.D.

Kiowa County

Anderson-Prichard Oil Corp. No. 1 Hancock, SE SE NW sec. 23-6-15w. Drlg. 80 ft.
Gauntt & Baker No. 1 Parks, NW NW SW sec. 29-7-20w. S.D. 720 ft.

Lincoln County

Stanolind O. & G. Co. and Amerada Pet. Corp. No. 1 Strader, NW NW NE sec. 18-13-3e. Wilcox 5,173 ft.
Wilcox O. & G. Co. No. 1 Evans, SW SW NW sec. 21-14-6. Drlg. 1,240 ft.
Wilcox O. & G. Co. No. 1 Royer, SE SE NE sec. 18-14-6. T.D. 3,372 ft.; S.O.& W.; S.D.

Logan County

Carter Oil Co. No. 1 Lydick, C E½ NW NE sec. 23-15-4w. Drlg. 2,975 ft.

Muskogee County

H. H. Heydrick No. 1 Bolby, C NE sec. 22-13-19. Sd. 667-70 ft.; 5,500,000 ft. gas; comp.

Okfuskee County

Burke-Greis Oil Co. No. 1 Capps, SE cor. sec. 7-13-7. Drlg. 180 ft.

Osage County

Norbla Oil Co. No. 1 Osage, SE cor. sec. 18-25-7. Drlg. 235 ft.

Payne County

R. L. Kemp et al No. 1 Rofferty, SE SE NE sec. 6-18-5. T.D. 3,205 ft.; to bradenhead gas.
Marydun Oil Co. et al No. 1 Moore, SE SW NW sec. 17-18-1e. Drlg. 3,985 ft.

Pontotoc County

Cowley et al No. 1 McCormick, NW SW SW SE sec. 27-2n-4e. T.D. 275 ft.; S.D.
H. W. Lee No. 1 Weatherly, NW SE NW sec. 24-1n-7. Drlg. 785 ft.
Jack Lynch et al No. 1-A Parker, SW SW SE sec. 17-4-8. Drlg. 2,105 ft.
Union Dev. Co. No. 1 Abbott, SW NW NE sec. 34-3-6. T.D. 3,320 ft.; S.D.

Pottawatomie County

Hall & O'Mara No. 1 Shaw, NE NE SE sec. 32-6-5. Set 7-in. 2,350 ft.; T.D. 3,346 ft.; bailing.

Seminole County

C. E. Davis et al No. 1 Jones, NW NE SW sec. 34-6-5. T.D. 2,314 ft.; P.B. 2,307 ft.; swb. 70 B.O. and 14 B.W.
W. B. Pine No. 1 Wright, SE SE NE sec. 16-6-6. Drlg. 3,513 ft.
W. A. Villines et al No. 1 Swan, NW NE NW sec. 26-7-5. Drlg. 1,300 ft.
H. V. Woodson and Marydun Oil Co. No. 1 Gilliland, SE SW sec. 24-11-7. T.D. 4,295 ft.; M.I.T.

Texas County

Hagey et al No. 1 Peck, C NE sec. 6-1n-13ecm. T.D. 2,842 ft.; csg. collapsed; S.D.
Harkendorf & Kuhn No. 1 Wiggins, C NW sec. 1-2n-14ecm. Drlg. 2,634 ft.

Washita County

L. B. McWhirter No. 1 fee, NW SW SW sec. 34-8-19w. T.D. 2,098 ft.; fsg.

SOUTHERN OKLAHOMA

Atoka County

Amerada Pet. Corp. and Stanolind O. & G. Co. No. 1 Ridgway, NE cor. sec. 24-3s-9. Set 8-in. 2,730 ft.; drlg. 2,922 ft.
C. M. Sheldon and Gardner Pet. Co. No. 1 Lee, NE NW SW sec. 2-4s-10e. T.D. 2,416 ft.; rmg.

Bryan County

Southern Oil Co. No. 1 Henry, NW NW NE sec. 10-8s-7. T.D. 5,003 ft.; D.&A.

Carter County

Texas Co. No. 1-B Cathey, SE NE NE sec. 6-5s-1w. Drlg. 4,784 ft.

Choctaw County

V. K. Chapman and T. N. Low No. 1 Hallum, NE NW NW sec. 4-7s-20. T.D. 813 ft.; S.D.

Johnston County

W. T. Sheldon No. 1 Chapman, C NW NW sec. 26-4s-6e. T.D. 3,176 ft.; S.D.

Love County

Sinclair Prairie Oil Co. No. 1 Peabody, NE cor. sec. 35-6s-2w. Drlg. sh. 3,832 ft.

Stephens County

Coline Oil Co. No. 1 Johnson, C SW SE SE NE sec. 1-2n-8w. T.D. 10,000 ft.; P.B. and drld. to 9,086 ft.; milling on cones.
Helmerich & Payne No. 1 Mauersberger, C S½ SW SE sec. 29-2n-8w. Drlg. 4,727 ft.

Tillman County

Gibson & Jennings No. 1 Burleson, SE SE SW sec. 35-2s-19w. Drlg. 3,085 ft.
M. G. Martin No. 1 Parris, NW NW SW sec. 3-3s-19w. T.D. 3,506 ft.; D.&A.
Smith No. 2 Hammell, NE NW NW sec. 6-5s-15w. T.D. 1,581 ft.; S.D.

ARKANSAS

Bradley County

Phillips Pet. Co. No. 1 Marsden, sec. 9-16w-11s. Drlg.

Cleveland County

J. T. Markwick and E. O. Olds No. 1 A. Vance, NW cor. NW sec. 18-11-11. S.D. 2,910 ft.; W.O.

Columbia County

Kerr-Lynn Oil Co. No. 1 Barnett, sec. 14-17-20. T.D. 7,740 ft.; set 7-in. csg. 7,052 ft.; set 723 ft. of 5-in. csg. at 7,720 ft.; perf. 7,623-51 ft.; swbd. in oil and w. wtr.; cleaned for 15 min.; killed to repair csg. connection; opened well; flwd. oil; closed and reopened; flwd. short time and went dead; swbg. sulf. wtr.
Standard Oil Co. of La. No. 1 Bodcaw-Barbara, NE cor. SE NW sec. 18-16-22. T.D. 7,226 ft.; rec. 18 more jts. stk. D.S.; fsg. for 31 jts. still in hole.
Standard Oil Co. of La. No. 1 S. T. Crone, NW cor. NW SE sec. 8-16-22. Top L. 7,264 ft.; porous and sat. to 7,272 ft., T.D.; D.S.T. 7,225-72 ft.; rec. 600 ft. oil and 60 ft. oil and mud in 20 min.; stuck 7-in. csg. 6,970 ft.; wsg. with oil.
Standard Oil Co. of La. No. 1 W. P. Phillips et al, 660 ft. N and W, C sec. 15-17-19. Sat. sd. 4,618-22 ft.; D.S.T. 4,616-50 ft.; rec. 105 ft. mud cut with oil and some gas, 20 min.; D.S.T. 4,912-30 ft. rec. 2,460 ft. S.W., 20 min.; drlg. 4,930 ft.

Crittendon County

Manning & Martin No. 1 Cartwright, SW cor. sec. 16-7n-8e. S.D. 4,200 ft.

Desha County

Columbian Fuel Corp. No. 1 Cross, SW cor. sec. 34-8s-3w. R.U.

Hempstead County

H. D. Easton et al No. 1 LaGrone, sec. 5-12-26. T.D. 2,940 ft.; P.B. 1,007 ft.; drlg. hd. sdy. sh. 1,685 ft.

Lincoln County

Fitzwater, Inc., No. 1 Owens, sec. 26-9s-8w. Drld. to 1,130 ft.; S.D.

Little River County

Heenan & Coe No. 1 Waldrop, SE NW sec. 21-12-28. S.D. 1,960 ft.
Joe G. Strahan et al No. 2 Dierks Lbr. Co. Drlg. 2,330 ft.

Miller County—Rodessa

F. W. Burford No. 2 Ahern, sec. 10-20-28. Drlg. 285 ft.
Burden & Cummings No. 1 Treadway, sec. 10-20-28. Drlg. sh.&L. 4,251 ft.
Gulf Oil Corp. No. 1 Hanner, SE cor. sec. 16-20-24. T.D. 6,020 ft.; set 7-in. csg. 5,926 ft.; comp.; 292 B.P.D.; 35/64-in. ck.
R. Lacy No. 2 Grogan, E½ W½ sec. 15-20-28. Por. L. 5,965-84 ft.; set 7-in. csg. 5,972 ft.; T.D. 6,025 ft.
W. M. Layton No. 1 McKellar, SE cor. W½ W½ sec. 15-20-28. Set 5½-in. csg. 5,938 ft.; T.D. 6,062 ft.; comp.; 250 B.P.D.; ¾-in. ck.
W. M. Layton No. 2 McKellar, sec. 15-20-28. R.U.
McClanahan & Feazel No. 2 Eason, C N½ NW SW sec. 12-20-28. Set 7-in. csg. 6,060 ft.; tstg. 6,112 ft.
R. W. Newell No. 1 Thomas, NW SE sec. 12-20-28. Set 5½-in. csg. 6,130 ft.; T.D. 6,144 ft.; perf. Hill sd. 5,964-6,015 ft.; comp.; 25 B.P.D.; heading through open tbg.
B. B. Orr No. 1 Mitchell, sec. 10-20-28. Set 9⅝-in. csg. 1,996 ft.; T.D. 2,010 ft.
Roberts Drlg. Co. No. 2-B Capps, sec. 10-20-28. R.U.
Texas Canadian Oil Corp. No. 2 Thomas, NE cor. NW SE sec. 12-20-28. T.D. 6,203 ft.; perf. 7-in. csg. 6,108-78 ft.; tstd. S.W.; arng. P.B. 6,160 ft.
Mrs. S. O. Thompson No. 1 Concord Methodist Church, NE cor. SE NE sec. 10-20-28. Drlg. sh.&L. 4,210 ft.
Mrs. S. O. Thompson No. 2 Greer, sec. 11-20-28. Drlg. sh. 1,000 ft.

Ouachita County

Copenhaven Oil Corp. No. 1 Evans, NE cor. NE SW sec. 20-11-19. S.D. 1,825 ft.
A. H. Tarver et al No. 1 Guy Smith, sec. 16-14-19. Tokio sd. 2,186-2,210 ft.; T.D. 2,331 ft.; W.O.

Pulaski County

A. L. Kitselman, No. 2 A. L. Kitselman, Jr., SE SE SW sec. 2-1s-13e. Drlg. v. hd. bl.rk. 2,456 ft.

Union County—Shuler

Alice Sydney Oil Co. No. 1 Powledge, SE cor. SW SE sec. O.W.W.O.; old T.D. 6,005 ft.; drlg. red sh. 7,405 ft.
E. M. Jones No. 3 Marine Oil Co., NE NW SE sec. 17-18-17. Set 16-in. csg. 138 ft.; drlg. 1,750 ft.
E. M. Jones et al No. 2-A Murphy, sec. 19-18-17. T.D. 1,150 ft.; P.B. 700 ft. to straighten hole.
Lion Oil Ref. Co. No. 2 Marine Oil Co., SW cor. E½ SE¼ sec. 17-18-17. Drlg. sdy. sh. 7,520 ft.
Lion Oil Ref. Co. No. 3 Marine Oil Co., sec. 17-18-17. R.U.
Lion Oil Ref. Co. No. 1 Mayfield, SE cor. Lot 3, Fract. NW¼ sec. 18-18-17. Drlg. red and gry. sh. 5,035 ft.
Lion Oil Ref. Co. No. 1 Miller, SW cor. NE NW sec. 18-18-17. Drlg. red sdy. sh. 7,355 ft.
Lion Oil Ref. Co. No. 4-A Edna Morgan, NW cor. Lot 1, SW sec. 18-18-17. T.D. 6,279 ft.; set 9-in. csg. 2,575 ft.; wshg. to bttm.
Lion Oil Ref. Co. No. 5-A E. Morgan, NE cor. Lot 7, SW sec. 18-18-17. Drlg. red and gry. sh. 5,996 ft.
Lion Oil Ref. Co. No. 5-B Morgan, SE cor. W½ SE sec. 18-18-17. Jones sd. 7,522-92 ft.; top L. 7,620 ft.; set 7-in. csg. 7,620 ft.; T.D. 7,625 ft.; comp.; 735 B.P.D.; 15/64-in. ck.
Lion Oil Ref. Co. No. 2-C D. S. and J. C. Morgan, SW cor. SE SE sec. 18-18-17. Drlg. red and gry. sh. 6,250 ft.
Marine Oil Co. No. 4 fee, NW cor. SW SW sec. 17-18-17. T.D. 7,590 ft.; set 7-in. csg. 7,578 ft.
Marine Oil Co. No. 3 Justiss, NE cor. Lot 7, NW sec. 18-18-17. Top Jones sd. 7,509 ft.; cg. sat. sd. 7,546 ft.
Marine Oil Co. No. 1 Miller, SE cor. Lot 1, NW sec. 18-18-17. Drlg. red and gry. sh. 6,230 ft.
Phillips Pet. Co. No. 4 Justiss, Lot 6, sec. 18-18-17. Set 10¾-in. csg. 2,266 ft.; drlg. red sh. 3,622 ft.
Phillips Pet. Co. No. 1 Marine Oil Co., NE cor. NW NE sec. 20-18-17. Top Jones sd. 7,527 ft.; Top L. 7,612 ft.; salty taste; T.D. 7,640 ft.
Phillips Pet. Co. No. 2 Marine, NE cor. NW NE sec. 20-18-17. Set 10¾-in. csg. 2,264 ft.; T.D. 2,300 ft.
Phillips Pet. Co. No. 2 Rosen, SE cor. SW NE sec. 18-18-17. Top Jones sd. 7,531 ft.; top L. 7,634 ft.; cg. hd. dense L. 7,671 ft.
Texas Canadian Oil Corp. No. 1 Powledge, C NE NW NW sec. 21-18-17. Drlg. 5,532 ft.

Union County—Other

Ark. Southern Oil Corp. No. 2-A Simmons, SW cor. NE NW sec. 15-18-15. T.D. 2,307 ft.; O.I.H.; pmpg.; no ga.
E. G. Bradham No. 1 S. L. Robbins, SW cor. SW NE sec. 12-19-16. S.D. sdy. sh. 2,300 ft.
Penn-Ark. Pet. Corp. No. 1 Raulston, sec. 12-17-14. T.D. 3,175 ft.; S.D.; litigation.
W. D. Wingfield, Tr. No. 2 Kidd Est., SE cor. NW SW sec. 15-18-13. Sd. S.D. 2,257-2,300 ft.; set 6-in. csg. 2,250 ft.; T.D. 2,300 ft.; W.O.S.R.

LOUISIANA

NORTH LOUISIANA PROVEN

Caddo—Rodessa

J. S. Rushing No. 2 Alexander, NW cor. sec. 3-23-16. Cg. 5,933 ft.
Shell Pet. Corp. No. 1-B Govt., SE cor. SW SE sec. 3-23-16. Cg. L.&sh. 5,958 ft.
Shell Pet. Corp. No. 2-B U. S. Govt., SE cor. sec. 3-23-16. Drlg. ch. rk. 2,981 ft.
Shell Pet. Corp. No. 3-B U. S. Govt., sec. 3-23-16. Drlg. 50 ft.
Shell Pet. Corp. No. 4-B U. S. Govt., sec. 3-23-16. Set 8⅝-in. csg. 2,082 ft.; W.O.C.
Standard Oil Co. of La. No. 2 Spearman, SE cor. SE SE sec. 3-23-16. Set 7-in. csg. 5,934 ft.; T.D. 5,972 ft.; U.R.
Williams & Long No. 1 Stiles, sec. 20-21-16. Drlg. sd. 905 ft.

N. LOUISIANA WILDCATS

Bienville Parish

Gulf Ref. Co. No. 1 Goodpine, sec. 25-14-8. Drlg. sh.&sd. 9,007 ft.
Producers O. & G. Co. No. 1 Locke, NE cor. sec. 9-15-10. O.W.W.O.; old T.D. 2,960 ft.; R.U. to deepen.

Bossier Parish

C. H. French No. 2 Larkin, NW cor. SE sec. 14-19-11. Drlg. sh. 300 ft.
Premier Inv. Co. No. 1 McDade, SE SW NE sec. 28-19-11. S.D. 1,901 ft.
Triangle Drlg. Co. No. 2-C Skannel, sec. 13-17-12. Cg. 3,090 ft.

Caddo Parish

Ardsell Oil Co. and H. W. Russell No. 2 Muslow, sec. 26-21-16. O.W.W.O.; T.D. 2,246 ft.; set 5½-in. csg. 2,205 ft.; W.O.S.R.
W. D. Chew No. 4 Spell, SE sec. 29-21-15. S.D. 1,517 ft.; comp.; pmpg. 10 B.P.D.
D.O.K. Oil Co. No. 1 Player, SE cor. NW SE sec. 26-21-5. O.W.W.O.; old T.D. 1,600 ft.; set 4½-in. csg. 2,252 ft.; W.O.S.R.; T.D. 2,255 ft.

LEGAL

NOTICE OF SALE OF OIL AND GAS LEASE

W. L. Webber, Receiver of the Security State Bank, Scranton, Kansas, will, on the 31st day of March, 1938, at two o'clock, P.M., in the Office of the State Bank Commissioner of Kansas, offer for sale to the highest bidder for cash in hand the following described property:

An oil and gas lease covering the following described land in the County of Linn, State of Kansas: "The Northwest Quarter (¼) of Section 11, Township 20, Range 23; also the North Half (½) of the Northeast Quarter (¼) of Section 10, Township 20, Range 23 and the Southeast Quarter (¼) of the Northeast Quarter (¼) of Section 10, Township 20, Range 23, all in Linn County, Kansas, containing two hundred and eighty (280) acres more or less."

There are three power and storage plants and approximately fifty-four equipped oil wells on this property.

Written bids will be received if accompanied by a bank draft or certified check up to two o'clock, P.M., on the date of sale.

W. L. Webber
Receiver of the Security State Bank
Scranton, Kansas
Topeka, Kansas

Driscoll No. 1 Muslow, sec. 4-20-15. T.D. 2,175 ft.; set 6⅝-in. csg. 2,152 ft.
J. P. Driscoll No. 2 Sattelite, sec. 10-20-15. R.U.
W. D. Flynn No. 3 Natalie, SW cor. sec. 10-21-16. T.D. 1,029 ft.; W.O.S.R.
W. D. Flynn No. 4 Natalie, SE cor. sec. 10-21-16. R.U.
W. H. Harrison, Jr., No. 3 Crystal Shoreline, SW cor. SW NW sec. 25-21-16. Set 4-in. csg. 2,255 ft.; T.D. 2,264 ft.; W.O.S.R.
Olson Drlg. Co. No. 1 Sharp, C NW NE sec. 10-18-16. Sd. 6,021-27 ft.; drlg. 6-100 ft.
Petroleum Heat & Power Co. No. 1 Wemple, NW cor. sec. 14-20-15. Set 6-in. csg. 2,185 ft.; T.D. 2,210 ft.; W.O. S.R.
W. G. Ray Drlg. Co. No. 5 Hunter, NE cor. sec. 17-19-14. Set 6⅝-in. csg. 2,428 ft.; W.O.S.R.
S. M. Richardson No. 2 Sentell, sec. 9-19-14. Set 7-in. csg. 2,437 ft.; tstg. 2,471 ft.; comp.; 10 B.P.D.; pmp.
J. E. Sedberry No. 1-A Dickinson, sec. 10-19-14. Set 10-in. at 80 ft.; W.O.C.
R. O. Smith No. 1 Lynn, sec. 20-21-14. D.&A. 2,310 ft.
Triple M Oil Co. No. 1 Boisseau, sec. 34-21-16. Drlg. sh. 1,101 ft.

Claiborne Parish

Atlantic Ref. Co. No. 1 English, sec. 29-21-4. Set 10¾-in. csg. 869 ft.; W.O.C.
Gulf Oil Corp. No. 1 McDonald, NW cor. SE NE sec. 2-20-5. Sat. L. 5,208-13 ft.; set 7-in. csg. 5,198 ft.; T.D. 5,219 ft.; comp.; 1,206 B.P.D.; 20/64-in. ck. T.D. 5,219 ft.
E. O. Heath No. 1-C Patton, sec. 1-20-5. Drlg. sh.&L. 4,700 ft.
Hollifield & McFarland No. 3 Patton Est., SE cor. SE NE sec. 2-20-5. T.D. 5,249 ft.; set 7-in. csg. 5,236 ft.
J. R. McMurray No. 2 Bean, sec. 32-21-4. T.D. 5,174 ft.; set 5½-in. csg. 5,154 ft.
W. H. North No. 1 Patton Est., sec. 11-20-5. Set 10¾-in. csg. 809 ft.; W.O.C.
E. T. Oakes et al No. 2 L. Lloyd, SE SE sec. 3-20-5. T.D. 5,328 ft.; set 5½-in. csg. 5,314 ft.
A. O. Olson No. 8-A Patton, sec. 30-21-4. Drlg. L.&sh. 5,030 ft.
Scout Oil Corp. No. 2 Bean, NE cor. SW sec. 32-21-4. Set 5½-in. csg. 5,155 ft.; T.D. 5,179 ft.; sat L. 5,165-74 ft.; comp. 41 B.P.H.; 42/64-in. ck.
Texas Canadian Oil Co. No. 1 Tanner C N½ SE NE sec. 32-21-4. Set 5½-in. csg. 5,257 ft.; T.D. 5,289 ft.; comp.; 58 B.P.H. on ½-in. ck.
Union Prod. Co. No. 2 Brownfield 5-19-5. T.D. 9,964 ft.; sh.; recmtd. back to 8,850 ft.; rmg. bridge at 8,475 ft.; drlg. sh. 9,213 ft.
G. H. Vaughn No. 1 Eppinger, C SW NE sec. 30-21-4. Drlg. sh. 1,180 ft.
Weaver Oil Corp. No. 2 Edmonds, sec. 16-20-5. Drlg. 600 ft.

De Soto Parish

Clear Lake Oil Co. No. 1 J. A. Woolum, NW sec. 29-12-12. W.O.; T.D. 2,690 ft.
La. Seaboard Oil Ref. Co. No. 1 Lawrence, sec. 36-12-14. Drlg. sh. 590 ft.
Major Oil Co. No. 1 Glauque, sec. 18-11-11. Drlg. 1,500 ft.
Pet. Heat & Power Co. No. 1 DeSoto Corp., SE cor. SW NW sec. 7-11-11. Missed sd.; T.D. sh. 2,868 ft.; S.D.
Pet. Heat & Power Co. No. 1 Matthews, sec. 29-12-11. Drlg. L.&sh. 3,575 ft.
Pet. Heat & Power Co. No. 2 Matthews, sec. 30-12-11. Set 7-in. csg. 2,505 ft.; T.D. 2,507 ft.; perf. 2,475-80 ft.; tstg.
Pet. Heat & Power Co. No. 1 Sample, sec. 29-12-11. Cg. 2,450 ft.
Pet. Heat & Power Co. No. 1 Taylor, NE cor. NE SE sec. 12-11-12. T.D. 3,695 ft.; P.B. 2,800 ft.; W.O.C.
Pet. Heat & Power Co. No. 2 Taylor, sec. 12-11-12. Abd.; will not drill.
Pet. Heat & Power No. 1 Williams Est., NE cor. SW SE sec. 12-11-12. Sd. 2,760-87 ft.; T.D. 2,818 ft.; arng. test.
Pet. Heat & Power No. 1 Williams, W. R., NW NE sec. 13-11-12. D.&A. 2,832 ft.
Texas Co. No. 2 White, SW NE sec. 24-12-12. Set 4½-in. csg. 835 ft.; tstd. dry; S.G.; W.O.; T.D. 890 ft.
Yandell Rogers No. 1 Kavanaugh, sec. 18-11-11. Drlg. sh. 1,790 ft.

Franklin Parish

Southern Star Pet. Co. No. 2 Grayson, NE cor. NE SE sec. 36-12-6e. S.D. 1,754 ft.

La Salle Parish

Alexander & Jarvis No. 1 Tremont, sec. 2-9-1e. Drlg. sh. 682 ft.
Graham & Harter No. 2 Urania, sec. 18-10-2e. Cg. 1,520 ft.
Pet. Heat & Power Co. No. 1 Gaharan, Lot 7, Blk. 1, Holmes & Adams Addn., sec. 25-10-1e. Set 6-in. csg. 1,530 ft.; T.D. 1,541 ft.; comp.; 5 B.P.D.; pmp.
Pet. Heat & Power Co. No. 2 Wright, sec. 26-10-1e. R.U.
Stovall, Tr., No. 4 Russell, SE SE sec. 25-10-1e. 6-in. csg. at T.D. 1,518 ft.; comp.; 5 B.P.D. oil and 100 B.P.D. S.W. on pmp.

Lincoln Parish

F. H. Brown No. 2 Patton, C S½ SE SW sec. 6-20-4. R.U. and S.D.
Compton & Hart No. 1 Patton Est., C N½ NW NE sec. 7-20-4. T.D. 5,307 ft.; comp.; 8 B.P.H.; 13/64-in. ck.; 5½-in. csg. 5,284 ft.
Magnolia Pet. Co. No. 2 Pollock, C S½ NE SE sec. 6-20-4. Drlg. L.&sh. 5,187 ft.
E. T. Oakes & Easton No. 1 Griggs, sec. 36-18-1w. T.D. 6,259 ft.; swbd. dry; W.O.

Morehouse Parish

W. J. Furlong No. 1 Clark, sec. 10-20-7e. Set 9⅝-in. csg. 2,805 ft.; top Big L. 6,207 ft.; hd. gr. cal. strks. L.; ran steel line measurement and Schlumberger; drlg. hd. sdy. L. 6,610 ft.

Natchitoches Parish

Jos. E. Popkins No. 1 Peavy Lbr. Co., NW sec. 36-7n-9w. R.U.; S.D.

Red River Parish

Glassell & Whitehurst No. 1 LeLong, NE NW NE sec. 25-12-11. Drlg. sh.&L. 2,800 ft.
Yandell Rogers No. 5 Gaspair, SE SW sec. 27-13-11. Set 5½-in. csg. 2,453 ft.; T.D. 2,474 ft.; W.O.S.R.

Sabine Parish

Hunter Co. No. 1-B Long Bell Lbr. Co., C SE SW sec. 1-7-13. Tstd. S.G. 2,091 ft.; T.D. 2,540 ft.; S.W.; D.&A.
H. N. Morris No. 1 Irving & Bishop, C NW NW sec. 18-7-12. Set 12-in. at 80 ft.
Pearl Oil Corp. No. 7 Cranford, SW cor. SW SE sec. 20-9-13. Set 6-in. at 1,475 ft.; acdzd.; tstg.; T.D. 1,664 ft.; W.O. S.R.
Plymouth Oil Corp. No. 1 Kezerle, sec. 3-7-13. Set 10-in. csg. 60 ft.
W. L. Posey No. 1 Ramirez, C NW NW sec. 12-7-13. Set 6-in. csg. 2,111 ft.; tstd.; S.O.; fsg. 2,167 ft.; S.D.
Sutton-Zwolle Oil Co. No. 1 Sabine Lbr. Co., SE cor. NW NE sec. 23-7n-14w. Set 9⅝-in. csg. 2,215 ft.; D.S.T. 3,843-53 ft.; rec. 1,200 ft. P.L.O. 9 min.; W.P. 275 lbs.; T.D. 3,865 ft.; set 7-in. csg. 3,846 ft.; drld. in well; tried to blow out; cleaned for 15 min. and S.I. for stg.; well went dead; drld. 1 jt. deeper and swbd. S.O.; T.D. 3,857 ft.; swbg.

Tensas Parish

H. V. Schumacker No. 4 Mount Plantation, sec. 39-11-12e. R.U.

Union Parish

Standard Oil Co. of La. No. 1 Frost Lbr., sec. 14-21-1e. Cg. sh.&strks. sd. 7,982 ft.

Webster Parish

S. W. L. Backus No. 4 Pardee Co., NE sec. 3-22-11. Set 10-in. csg. 156 ft.
Fohs Oil Co. No. 1 Crichton, sec. 33-21-10. R.U.
Hunt Oil Co. No. 6 Babb, C NE SW sec. 14-21-10. Drlg. L.&sh. 4,455 ft.
Hunt Oil Co. No. 8 Davis, C NW NE sec. 23-21-10. Drlg. anhy.&sh. 4,338 ft.
Hunt Oil Co. No. 19 Hope, NW cor. sec. 24-21-10. Cg. L.&sh. 5,832 ft.
Magnolia Pet. Co. No. 1 Coyle-Tiner, C sec. 21-21-10. Drlg. red sh. 6,090 ft.
Magnolia Pet. Co. No. 2 Crichton, SE cor. NE NW sec. 33-21-10. Drlg. sh. 5,675 ft.
Ohio Oil Co. No. 5 Holloway, NE cor. SE NE sec. 23-21-10. O.W.W.O.; R.U. to deepen.
Magnolia Pet. Co. No. 1 Sexton Unit, NW SE sec. 32-23-9. Cd. Bodcaw sd.; no show; cd. sd. 8,293-8,310 ft.; gas odor; slight show gas and dist.; cg. 8,359 ft.
Midstates Oil Corp. No. 1 Welori Lbr. Co., C NW NW sec. 3-20-10. Drlg. sh. 1,745 ft.
Morgan et al No. 1-A Hope, C NW NW sec. 25-21-10. Drlg. sh.&L. 4,675 ft.
North American Oil Consol. Co. No. 1 Stewart, C SE NE sec. 32-27-10. Set 9⅝-in. csg. 5,866 ft.; drlg. hd. sd. 7,816 ft.
Ohio Oil Co. No. 3 Bodcaw, Acct. 4, sec. 28-21-10. Drlg. sh. 3,343 ft.
Ohio Oil Co. No. 49 Bodcaw (Acct. 3), C NW NW sec. 34-21-10. Set 13⅜-in. csg. 808 ft.; drlg. L.&sh. 5,978 ft.
Ohio Oil Co. No. 1 Crutsinger, NE cor. sec. 35-21-10. Drlg. L.&sh. 6,215 ft.
Ohio Oil Co. No. 1 Gray, NW cor. SE NW sec. 28-21-10. Set 13⅜-in. csg. 805 ft.
Ohio Oil Co. No. 24 Gray, NE cor. sec. 35-21-10. Drlg. sh.&anhy. 4,303 ft.
Ohio Oil Co. No. 5 Holloway, NE cor. SE NE sec. 23-21-10. Plg. lnr. to deepen, 4,712 ft.
Oliphant No. 3 Banks, sec. 34-21-10. Drlg. anhy.&sh. 4,425 ft.
A. G. Oliphant No. 1 Central Inv. Co., C NW SE sec. 33-21-10. Holloway sd. 5,862-91 ft.; T.D. 5,905 ft.; comp.; 1,057 B.P.D.; ½-in. ck.
A. G. Oliphant No. 1 Stewart, sec. 33-21-10. Cg. 5,990 ft.; in Holloway sd.
Stanolind O. & G. Co. No. 1 Pardee Co., SW NE sec. 36-21-10. T.D. 6,003 ft.; set 9⅝-in. csg. 5,992 ft.; sqzd. csg. leak; W.O.C.
Union Prod. Co. No. 1 Stewart, SE cor. SE sec. 28-21-10. Drlg. hd. sdy. sh. 7,593 ft.

Winn Parish

G. W. Ziegen No. 13 La. Cen. Lbr. Co., sec. 4-13-1e. 12-in. at 62 ft.; W.O.C.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co. No. 1 Faulk, sec. 66-12s-3e. 10¾-in. csg. 1,585 ft.; T.D. 8,062 ft.
Continental Oil Co. No. 1 Hebert, sec. 67-12s-3e. 10¾-in. csg. 1,510 ft.; drlg. sh. 4,861 ft.

Bay St. Elaine—Terrebonne Parish

F. J. LeBlanc No. 2 Wurzlow, sec. 17-22s-18e. S.D. 816 ft.
Texas Co. No. 16 State, sec. 12-22s-17e. Drlg. sh. 1,814 ft.

Bayou Blue—Iberville Parish

Humble O. & R. Co. No. 6 Wilbert Sons Lbr. Co., sec. 66-9s-11e. T.D. 4,218 ft.

Bayou Cocotrix—Terrebonne Parish

Shell Pet. Corp. No. 5 Pelican, 10¾-in. csg. 2,480 ft.; drlg. sdy. sh. 6,200 ft.
Shell Pet. Corp. No. 4-B Realty Operators, sec. 17-17s-15e. 10¾-in. csg. 2,456 ft.; T.D. 9,042 ft.; oil sd.; 7-in. csg. 9,485 ft.; I.P. 970 B.P.D.; ¼-in. ck.

Bayou De Allemands—St. Charles Parish

Amerada Pet. Corp. No. 1 Gheens Realty Co., sec. 56-15s-20e. Drlg. sh. 4,059 ft.

Big Lake—Cameron Parish

Union Sulphur Co. No. 2 Miami Corp., sec. 19-12s-8w. T.D. 7,924 ft.; P.B. 7,650 ft.; to sdtrk.; cg. sd. 8,406 ft.

Black Bayou—Calcasieu Parish

Shell Pet. Corp. No. 40 Watkins. T.D. 6,224 ft.; rng. 7-in. csg.

Edgerly—Calcasieu Parish

La. Crusader Oil Co. No. 1 La. Prairie, sec. 21-9s-11w. T.D. 5,108 ft.; P.B. and sdtrk.; T.D. 3,082 ft.; P.B. and S.T. 2,350 ft.; T.D. 2,891 ft.; P.B. and sdtrkd.; drlg. salt 4,575 ft.

Caillou Island—Terrebonne Parish

Texas Co. No. 1 L.L.&E., sec. 18-23s-20e. T.D. 5,036 ft.; S.D. for repairs.

Cameron Meadows—Cameron

Burton-Sutton Oil Co. No. 23 School Ld., sec. 16-14s-13w. Drlg. sh.&L. 2,915 ft.
Magnolia Pet. Co. No. 22 Cameron Meadows, sec. 21-14s-13w. Drlg. sd.& shells 275 ft.

Chenevville—Rapides Parish

Amerada Pet. Corp. No. 4 Weil, sec. 53 1s-2e. 9⅝-in. csg. 6,471 ft.; T.D. 7,045 ft.; salt.

Charenton—St. Mary Parish

Pan American Prod. Co. No. 5 Law Realty Co., sec. 25-13s-9e. Drlg. sh. 460 ft.
Pan American Prod. Co. No. 3 Robichaux, sec. 11-13-9e. Cg. sh. 1,929 ft.
Pan American Prod. Co. No. 3 South Coast Corp., sec. 30-18s-10e. T.D. 7,833 ft.; P.B. 7,228 ft.
Pan American Prod. Co. No. 3 Veeder, sec. 11-13s-9e. T.D. 1,893 ft.; 7-in. csg. 1,878 ft.; I.P. 247 B.P.D.; ¼-in. ck.

Choctaw—Iberville Parish

Louisiana Crusader Oil Co. No. 1 E. B. Schwing, sec. 29-8s-11e. T.D. 8,969 ft.; well tried to blow out; stk. D.S.; abd.
Standard Oil Co. No. 8 Gay, sec. 52-9s-11e Drlg. sdy. sh. 6,473 ft.

Darrow—Ascension Parish

Darrow Oil Co. No. 1 Dennis, sec. 68-10s-2e. Drlg. sh. 2,000 ft.; no report.
Humble O. & R. Co. No. 13 Gumbel, sec. 33-10s-2e. T.D. 6,954 ft.; 7-in. csg. 6,940 ft.
Kiva Oil Co. No. 1 Duplessis, sec. 69-10s-2w. T.D. 60 ft.; S.D.

Dog Lake—Terrebonne Parish

Texas Co. No. 21 State, sec. 5-22s-16e. T.D. 7,174 ft.; P.B. 5,490 ft.; W.O.C.

Fausse Point—Iberia Parish

Texas Co. No. 4 State, sec. 35-11s-8e, 18⅝-in. csg. 90 ft.; top sd. 7,912 ft.; top salt 6,595 ft.; drlg. sh. 8,532 ft.

Four Isle—Terrebonne Parish

Texas Co. No. 9 L.L.&E., sec. 24-21s-16e. T.D. 8,553 ft.; P.B. 3,881 ft.; sdtrk.; T.D. 6,943 ft.; 9⅝-in. csg. 6,870 ft.; drlg. sd. 10,369 ft.

Garden Island—Plaquemines Parish

Texas Co. No. 18 State, sec. 37-23s-33e. T.D. 5,064 ft.; P.B. and sdtrkd.; cg. sd. S.O. 4,839 ft.
Texas Co. No. 28 state, sec. 37-23s-33e. Drlg. salt 7,200 ft.

Hackberry—Cameron Parish

W. T. Burton No. 3 Lewis, sec. 22-12s-10w. R.U.
W. T. Burton No. 5 Vincent, sec. 22-12s-10w. T.D. 3,410 ft.; sdtrkd.; drlg. sh. 3,162 ft.
F. J. LeBlanc No. 1 Doiron, sec. 36-12s-10w. T.D. 3,738 ft.; cutting and pulling screen.
Stanolind O. & G. Co. No. 8 Carter & Sweeney, sec. 22-12s-10w. R.U.
Stanolind O. & G. Co. No. 10 Carter & Sweeney, sec. 22-12s-10w. R.U.; (cor.).
Stanolind O. & G. Co. No. 8 Duhon, sec. 22-12s-10w. T.D. 3,300 ft.; perf. csg. 3,230-44 ft.; I.P. 148 B.P.D.; flwg. by hds.
Stanolind O. & G. Co. No. 54 State-Kelso, sec. 16-12s-10w. T.D. 5,825 ft.; P.B. 4,000 ft.; W.O.C.
Superior Oil Co. No. 1 Benson-Vincent, sec. 30-12s-10w. Drlg. sdy. sh. 5,694 ft.
Texas Co. No. 24-B State, sec. 12s-9w. Drlg. sh. 6,595 ft.
Union Sulphur Co. No. 1 Doiron, sec. 37-12s-10w. T.D. 4,888 ft.; 7-in. csg. 4,876 ft.; heaving sh. 5,940 ft.; P.B. 3,572 ft.; sdtrkg. at 3,531 ft.; drlg. sdy. L. 3,982 ft.
York Oil Field Supply No. 3 Vincent, sec. 28-12s-10w. T.D. 2,947 ft.; P.B. 2,895 ft.; P.B. 2,848 ft.; to sdtrk.; T.D. 3,285 ft.; P.B. to 2,800 ft.; W.O.C.

Horseshoe Bayou—St. Mary Parish

Texas Co. No. 1 St. Mary Parish Ld. Co., sec. 37-17s-9e. 13⅜-in. csg. 1,837 ft.; drlg. sh.&L. 10,640 ft.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 2 Carter, sec. 38-13s-9e. T.D. 9,939 ft.; 7-in. csg. 9,937 ft.; T.D. 10,476 ft.; well tried to blow out; fsg.

Jennings—Acadia Parish

H. Fotiades No. 2 Washington Opelousas, sec. 41-9s-2w. 16-in. csg. 106 ft.
Gulf Ref. Co. No. 39 Arnaudit, sec. 47-9s-2w. T.D. 4,840 ft.; P.B. 2,585 ft.; T.D. 4,586 ft.; 9⅝-in. csg. 4,578 ft.; cg. hd. sd. 5,586 ft.
Jolly Pet. Co. No. 2 McFarlain, sec. 41-9s-2w. Drlg. sdy. L. 5,795 ft.
Pet. Heat & Power Co. No. 1 Iowa-Jennings, sec. 45-9s-2w. R.U.R.
Stanolind O. & G. Co. No. 19 Houssiere-Latrelle, sec. 47-9s-2w. T.D. 6,448 ft.; P.B. 6,135 ft. to strtn. hole; T.D. 6,979 ft.; P.B. 6,700 ft.; drlg. sh. 7,443 ft.
Superior Oil Co. No. 2 Julis Clement, sec. 46-9s-2w. Drlg. sh.&shells 2,769 ft.
Superior Oil Co. No. 6 Jennings-Heywood, sec. 41-9s-2w. T.D. 6,056 ft.; fsg. P.B. and sdtrkd.; drlg. 4,656 ft.
Superior Oil Co. No. 9 Leckelt, sec. 42-9s-2w. T.D. 7,480 ft.; P.B. 5,302 ft.; T.D. 7,062 ft.; P.B. 5,120 ft.; drlg. sdy. sh. 6,517 ft.
Superior Oil Co. No. 10 Leckelt, sec. 43-9s-2w. R.U.
Superior Oil Co. No. 11 Leckelt, sec. 42-9s-2w. Drlg. sh. 6,185 ft.
Superior Oil Co. No. 12 Leckelt, sec. 42-9s-2w. Drlg. sdy. sh. 4,012 ft.
Superior Oil Co. No. 13 Leckelt, sec. 42-9s-2w. R.U.
Victor Weisse No. 1 Clement, sec. 46-9s-2w. Top salt 3,819 ft.; S.D. 3,938 ft. D.S. stk.; T.D. 3,139 ft.; fsg.

Lafitte—Jefferson Parish

Texas Co. No. 10 Lafitte, sec. 17-17s-24e. Drlg. sh. 1,825 ft.
Texas Co. No. 2 Marrero Ld. & Inv. Co., sec. 21-17s-24e. T.D. 10,187 ft.; 7⅝-in. csg. 10,159 ft.; perf. csg. 10,065-95 ft.; comp.; no ga.
Texas Co. No. 3 Marrero Ld. Co., sec. 29-17s-24e. R.U.
Texas Co. No. 9 Rigolet-Cooperation Fur Co., sec. 29-17s-24e. Drlg. sh.&L. 7,768 ft.

Lake Long—Lafourche Parish

Fohs Oil Co. No. 4 State, sec. 64-17s-19e. 10¾-in. csg. 2,707 ft.; drlg. sh. 4,110 ft.

Lake Pelto—Terrebonne Parish

Texas Co. No. 19 State-Lake, sec. 17-23s-18e. Drlg. sh. 5,703 ft.

Leesville—Lafourche Parish

Texas Co. No. 68 L.L.&E., sec. 27-21s-22e. Drlg. sd. 4,276 ft.

Lirette—Terrebonne Parish

Humble O. & R. Co. No. 1 Wurzlow, sec. 32-19s-19e. Drlg. sdy. sh. 3,055 ft.
Union Prod. Co. No. 1 Fundenburk, Unit 1, sec. 50-19s-19e. T.D. 2,905 ft.; run csg.

New Iberia—Iberia Parish

Wm. Helis No. 5 Bolivar, sec. 56-12s-7e. T.D. 4,337 ft.; salt; P.B. and sdtrkd.; T.D. 3,594 ft.; 7-in. csg. 3,100 ft.
Wm. Helis No. 4 Schwing, sec. 56-12s-7e. Drlg. salt 4,214 ft.
Texas Co. No. 10-B Hanzen, sec. 54-12s-7e. T.D. 5,235 ft.; 7⅝-in. csg. 5,215 ft.; W.O.C.

North Crowley—Acadia Parish

Humble O. & R. Co. No. 2 Habetz, sec. 45-8s-1e. Drk.
Humble O. & R. Co. No. 1 Smith, sec. 44-8s-1e. Drlg. sh. 7,502 ft.
Humble O. & R. Co. No. 1 Traham, sec. 3-9s-1e. Cg. sh. 8,601 ft.

Port Barre—St. Landry Parish

Pan American Prod. Co. No. 4 Cormier, sec. 4-6s-5e. Cg. sdy. sh. 4,978 ft.
Texas Co. No. 22 Botney Bay Lbr. Co., sec. 4-6s-5e. Cg. L. rk. 3,569 ft.

Quarantine Bay—Plaquemines Parish

Gulf Ref. Co. No. 4 State, sec. 17-19s-17e. T.D. 5,700 ft.; 9⅝-in. csg. 5,560 ft. drlg. sh. 6,090 ft.

Roanoke—Jeff Davis Parish

Humble O. & R. Co. No. 11-B Devilbiss, sec. 11-9s-4w. T.D. 8,842 ft.; 7-in. csg. 8,842 ft.; W.O.C.

Sorrento—Ascension Parish

Sorrento Oil Co. No. 1 L. L. Barnard et al, sec. 16-10s-4e. 10¾-in. csg. 1,070 ft top salt 4,102 ft.; S.D. 4,166 ft.; salt. abd.

South Elton—Jeff Davis Parish

Stanolind O. & G. Co.-Amerada Pet. Corp. No. 3-B Calcasieu Natl. Bank, sec. 27-7s-3w. T.D. 9,154 ft.; conditioning hole; 9⅝-in. csg. 8,647 ft.; T.D. 11,680 ft.; conditioning hole.

Starks—Calcasieu Parish

Capital Oil Co. No. 1 Lutcher-Moore, sec. 24-9s-13w. R.U.

Sulphur—Calcasieu Parish

Union Sulphur Co. No. 852 fee, sec. 29-9s-10w. T.D. 5,068 ft.; P.B. and sdtrkd.; T.D. 5,193 ft., salt; P.B. 1,703 ft.; T.D. 3,586 ft.; rmg.
Union Sulphur Co. No. 858 fee, sec. 29-9s-10w. T.D. 5,027 ft.; P.B.; sdtrkd.; drlg. sd. 4,362 ft.

Valentine—Lafourche Parish

Wm. Helis No. 1 Valentine-Sugars, Inc., sec. 2-17s-20e. T.D. 6,931 ft.; fsg.
Pan American Prod. Co. No. 1-B Community, sec. 58-17s-20e. T.D. 8,160 ft.; run 7-in. csg.
Pan American Prod. Co. No. 16 Harang, sec. 7-17s-20e. T.D. 7,236 ft.; P.B. and sdtrkd.; T.D. 6,789 ft.
Pan American Prod. Co. No. 17 Harang, sec. 9-17s-20e. Drlg. sh. 7,347 ft.

Venice—Plaquemines Parish

Tide Water Oil Co. No. 5 Manhattan Fruit

Co., sec. 26-26s-30e. Top oil sd. 7,250 ft.; T.D. 7,300 ft.; P.B. 4,800 ft.: sdtrkd. at 4,813 ft.; cd. oil sd. 7,101-68 ft.; drlg. hd. sd. 7,219 ft.

Tide Water Asso. Oil Co. No. 6 Manhattan Ld. & Fruit Co., sec. 26-21s-30e. Cd. sd. S.O. 5,950-65 ft.; cd. oil sd. 7,127-59 ft.; T.D. 7,202 ft.; rng. 7-in. csg.

Vinton—Calcasieu Parish

M. McLean No. 17 Gray, sec. 35-10s-12w. R.U.

Sutton-Burton No. 1 Calcasieu Natl. Bk., sec. 3-11s-12w. T.D. 4,500 ft.; S.D.

Ville Platte—Evangeline Parish

Continental Oil Co. No. 1 N. H. Hirsch, sec. 44-3s-2e. Drlg. sh. 8,797 ft.

Continental Oil Co. No. 1 McDaniels, sec. 44-3s-2e. Drlg. sh.&sdy.L. 8,380 ft.

Continental Oil Co. No. 1 Opelousas, St. Landry Securities Co., sec. 44-3s-2e. Drlg.

Continental Oil Co. No. 1 Tate, sec. 44-3s-2e. Drlg. sh. 8,276 ft.

Continental Oil Co. No. 1 T. E. Vidrine, sec. 47-3s-2e. Drlg. sd.&sh. 4,644 ft.

Welsh—Jeff Davis Parish

J. Massart No. 1 L. T. Mathews, sec. 27-9s-5w. Drlg. gravel 315 ft.

Stanolind O. & G. Co. No. 1 W. B. Conover, sec. 20-9s-5w. 13⅜-in. csg. 2,017 ft.; cg. sh. 6,976 ft.

White Castle—Iberville Parish

Shell Pet. Corp. No. 6 Shingle. T.D. 6,449 ft.; sd. S.O.; I.P. 252 B.O. and 18 B.W.; 10/64-in. ck.

Woodlawn—Jeff Davis County

Union Sulphur Co. No. 2 Calcasieu Natl Bk., sec. 12-9s-6w. Drlg. sh.&L. 8,000 ft.

S. LOUISIANA WILDCATS

Acadia Parish

H. E. Dalton No. 1 Setting, sec. 17-7s-1w T.D. 5,106 ft.; P.B. to approx. 500 ft T.D. 3,925 ft.; D.S. stuck.

Humble O. & R. Co. No. 1 Finch, sec. 22-10s-1e. 9⅝-in. csg. 7,474 ft.; drlg. sh. 9,017 ft.

Avoyelles Parish

G. C. Koch et al No. 1 Kelone, sec. 21-2n-3e. 10¾-in. csg. 987 ft.; T.D. 1,163 ft.; D.S. stk.

Beauregard Parish

Republic Prod. Co. No. 1 Lutcher-Moore Lbr. Co., sec. 10-13w-6s. 10¾-in. csg. 1,015 ft.; drlg. sd.&sh. 4,128 ft.

Calcasieu Parish

Shell Pet. Corp. No. 1 Calcasieu Natl. Bk. sec. 18-11s-10w. T.D. 9,073 ft.; abd.

Sun Oil Co. No. 1 Lutcher-Moore Lbr. Co., sec. 1-8s-13w. Drlg. sh. 2,028 ft.

Wheeler Oil Corp. No. 2 Sch. Ld., sec. 16-9s-7w. 15½-in. csg. 46 ft.; S.D. 641 ft.

Cameron Parish

Humble O. & R. Co. No. 1-B Miami Corp., sec. 7-14s-6w. 13⅜-in. csg. 2,150 ft.; drlg. hd. sd. 8,325 ft.

Superior Oil Co. No. 1 Sells, sec. 5-15s-8w. Bldg. drk.

Cameron Parish—Gulf of Mexico

Superior Oil Prod. Co. et al No. 1 State Gulf of Mexico, 3,800 ft. W, 6,200 ft. S of SE cor. of irregular sec. 4-15s-8w 10¾-in. csg. 1,157 ft.; 7⅝-in. csg. 7,166 ft.; T.D. 9,394 ft., sd.; well attempted to blow out; killed; D.S. stk. 8,800 ft.; P.B. 5,500 ft.; to test; flwd. est. 250 B.P.D.; 7/64-in. ck.; S.I.

East Baton Rouge Parish

Austin B. Taylor No. 1 Duplantier, sec. 65-7s-1w. T.D. 6,477 ft.; sd. showing oil; run 7-in. csg.

Iberia Parish

Texas Co. No. 1 Bayless-Jones, sec. 58-12s-5e. Drlg. sh.&L. 4,021 ft.

Texas Co. No. 2-B Vermilion Bay, sec. 21-16s-5e. T.D. 9,101 ft.; P.B. and sdtrkd at 5,788 ft.; T.D. 7,020 ft.; P.B. 6,385 ft.; to sdtrk.; T.D. 7,623 ft.; P.B. 7,176 ft.; to sdtrk.

Jefferson Parish

Julius Szodomka No. 1 Carroll, sec. 12-12s-11e. Drlg. sh. 1,500 ft.

Lafayette Parish

Continental Oil Co. No. 1 Foreman, sec. 36-9s-3e. Drlg. sh. 8,660 ft.

Pointe Coupe Parish

Batchelor Oil Co. No. 1 Hackney, sec. 28-3s-8e. 20-in. csg. 117 ft.; 13⅜-in. csg. 2,170 ft.; drlg. sh. 6,114 ft.

St. Bernard Parish

Gulf Ref. Co. No. 3 State Lake, Twp. 12s-15e. R.U.

St. James Parish

Continental Oil Co. No. 1 Realty Operators, sec. 17-12s-17e. R.U.

St. Landry Parish

Nixon & Toombs No. 1 Boagni, sec. 41-6s-4e. R.U.

St. Martin Parish

Carter & Stewart No. 2 Martin, sec. 32-9s-7e. Top salt 4,477 ft.; T.D. salt 4,526 ft.; abd.

Shell Pet. Corp. No. 1 Unit, sec. 11-14s-12e. Cg. sh. 9,486 ft.

St. Mary Parish

Pet. Heat & Power Co. No. 9, sec. 9-13s-9e. S.D. 3,009 ft.

Terrebonne Parish

Fohs Oil Co. No. 1 Buckley & Bourg, sec. 77-19s-17e. Drlg. hd. sd. 8,956 ft.

Fohs Oil Co. No. 1 State, sec. 41-19s-19e. 18⅝-in. csg. 246 ft.; cd. sd. S.G. 6,894-6,915 ft.; T.D. 8,279 ft.; fsg.

TEXAS

Week Ending March 19

GULF COAST FIELDS

Lockridge—Brazoria County

Gulf Oil Corp. No. 5 Carrie Baker, J. W. Hall Sur. No. 11. Drk.

Gulf Oil Corp. No. 6-A Wilkes and Smith, J. W. Hall Sur. No. 11. Drlg. sh. 4,896 ft.

Hastings Field—Brazoria County

Humble O. & R. Co. No. 12 R. D. Haden, R. Hoppel Sur. Drk.

Humble O. & R. Co. No. 9 W. G. McDeed, H.T.&B. Sur. No. 27. Cg. sd. 6,050 ft.

Navarro Oil Co.-Humble O. & R. Co. No. 3-A W. F. Beers, Perry and Austin Sur. T.D. 6,104 ft.; tstg.

Producers Inv. Co. No. 5 C. H. Alexander, A.C.H.&B. Sur. No. 1. Drk.

Jay Simmons No. 4 C. H. Alexander, H. T.&B. Sur. No. 28. T.D. 1,250 ft.

Stanolind O. & G. Co. No. 2 L. B. Bisbee, H.T.&B. Sur. No. 37. Drk.

Stanolind O & G. Co. No. 10 F. N. Brown, H.T.&B. Sur. No. 29. Drlg. sh. 5,910 ft.

Stanolind O. & G. Co. No. 20 Drake, H. T.&B. Sur. No. 36. R.U.

Stanolind O. & G. Co. No. 15-A H. H. Ford, A.C.H.&B. Sur. Drlg. sh. 2,630 ft.

Stanolind O. & G. Co. No. 8 Guido, H.T. &B. Sur. No. 36. Drk.

Stanolind O. & G. Co. No. 6 Matsushita, H. Stevens Sur. Drlg. sh. 5,975 ft.

Stanolind O. & G. Co. No. 1 R. J. Schmidt, H. Stevens Sur. R.U.

Stanolind O. & G. Co. No. 2 Velma Stockwell, H. Stevens Sur. T.D. 6,080 ft.; tstg.

Old Ocean—Brazoria County

Harrison & Abercrombie No. 5 Bernard, C. Breen Sur. 9⅝-in. csg. 7,000 ft.; drlg. sdy. sh. 10,356 ft.

Harrison & Abercrombie No. 1 Osberne, C. Breen Sur. Cd. sdy. sh. 10,212 ft.

Harrison & Abercrombie Oil Co. No. 1 Troyer and West Texas Abst. Co., C. Breen Sur. Drlg. sh. 9,696 ft.

Mike Hogg No. 2 Varner, W. Varner Lge. R.U.

Texas Co. No. 21 Abrams, Geo. Tennille Sur. Drk.

West Columbia—Brazoria County

Adrian Moore No. 2 Gulf fee, George Tennille Sur. Drlg. L. 4,470 ft.

Frost and Dunnan No. 1 E. S. Parker, Geo. Tennille Sur. Bldg. drk.

Sterling O. & R. Co. No. 1 Munson, G. Tennille Sur. Drlg. sh. 4,712 ft.

Texas Co. No. 20-A Abrams, George Tennille Sur. Drlg. sh.&L. 4,316 ft.

Texas Co. No. 2 Goldman, G. Tennille Sur. Drlg. sdy. sh. 5,310 ft.

Texas Co. No. 7 J. G. Phillips, George Tennille Sur. Drlg. sh.&L. 3,986 ft.

Texas Co. No. 4 T. L. Smith, Geo. Tennille Sur. Drlg. sd.&sh. 5,816 ft.

Wallace Oil Co. and others No. 1 Hargrove, G. Tennille Sur. Drlg. sh. 4,620 ft.

Calhoun—Heyser—Victoria County

Blanco Oil Co. et al No. 9-C Dunwoody, A. Sisneros Sur. Spd.

George Echols No. 5 O. M. Lander, J. E. Galban Sur. Cd. oil sd. 5,725-48 ft.

Gulf Oil Corp. No. 2 R. R. Bonner, J. E. Galban Sur. Drlg. sh. 5,610 ft.; no report.

Gulf Oil Corp. No. 4-B C. P. Traylor, J. Galban Sur. Drk.

Sinclair Prairie Oil Co. No. 11 W. H. Bennett, A. Sisneros Sur. Drk.

Sinclair Prairie Oil Co. No. 12 W. H. Bennett, A. Sisneros Sur. R.U.

Cedar Point Field—Chambers County

Humble O. & R. Co. No. 1 State, sec. 95. Spd.

Standard Oil Co. of Texas and Salt Dome Oil Co. No. 2 State, sec. 119. Driving piling.

Seabreeze—Chambers County

Sun Oil Co. No. 1 R. J. Barrow, A. Yarbo Sur. R.U.

Sun Oil Co. No. 1 Seabreeze Ld. Co., H.T.&B. Sur. 102. 10¾-in. csg. 1,948 ft. T.D. 8,889 ft.; 7-in. csg. 8,865 ft.; perf. csg. 8,850-60 ft.; swbg.

Sun Oil Co. No. 1 J. T. White, sec. 118, H.T.&B. Sur. T.D. 8,485 ft.; oil sd.; tstg.

Silsbee—Hardin County

Humble O. & R. Co. No. 1 B. L. Kirkendall, NE offset to No. 1 Howell. Drlg. sd. 1,610 ft.

Republic Prod. Co.-Houston Oil Co. No. 28 Brooks, G. W. Banks Sur. 10¾-in. csg. 1,553 ft.; 7-in. csg. 6,967 ft.; W. O.C.

Eureka—Harris County

Jack Frazier No. 1 Bollmer & Neimann, J. Reinerman Sur. 10¾-in. csg. 2,540 ft.; T.D. 7,730 ft.; rng. csg.

Fairbanks—Harris County

Amerada-Stanolind O. & G. Co. No. 1 E. M. White, Geo. Ayers Sur. Cg. 6,880 ft.

H. E. Williams No. 1 A. Vega, G. Williams Sur. 10¾-in. csg. 850 ft.; T.D. 6,836 ft.; 5½-in. csg. 6,835 ft.; perf. csg. 6,822-34 ft.; tstg.

Friendswood—Harris County

Humble O. & R. Co. No. 1 H. Goodwin, W. K. Smith Sur. T.D. 6,042 ft.; W.O.C.

Humble O. & R. Co. No. 4 E. A. Grey, Perry and Austin Sur. Drlg. sh. 1,316 ft.

Humble O. & R. Co. No. 5 E. A. Grey, Perry and Austin Sur. Drk.

Humble O. & R. Co. No. 6 E. A. Gray, Perry & Austin Sur. Drlg. sh. 5,587 ft.

Humble O. & R. Co. No. 1 J. L. Jones, Perry & Austin Sur. Drk.

Humble O. & R. Co. No. 1 W. H. Moore, W. D. C. Hall Sur. T.D. 6,043 ft.; W. O.C.

Humble O. & R. Co. No. 1 E. E. Watson. Drk.

Humble O. & R. Co. No. 2 B. A. Whitcomb, T. Choate Sur. Drlg. sh. 2,300 ft.

Hitchcock—Galveston County

Red Bank Oil Co. No. 1 Stewart Title-Guaranty Co., Lot 6, Blk. S, J. D. Moore Sur. Drlg. sh. 6,127 ft.

LaBelle—Jefferson County

Sun Oil Co. No. 3 Broussard-Hebert, B. Blackman Sur. Drlg. sh. 7,397 ft.

North Cheek—Jefferson County

Magnolia Pet. Co. No. 4 J. H. Phelan, A. Stivers Sur. Bldg. drk.

Hardin—Liberty County

Atlantic Ref. Co. No. 2 W. McMurtry, H. B. Johnson Sur. Spd.

Fohs Oil Co. No. 1 Johnson, H. B. Johnson Sur. Drlg. sh. 2,786 ft.

Gulf Oil Corp. No. 1 M. F. Tullos, H. B. Johnston Sur. Drlg. sh.&L. 6,857 ft.

Halliburton Oil Prod. Co. No. 2 Hanchy, H. B. Johnson Sur. Drk.

Humble O. & R. Co. No. 1 W. McMurtry, H. B. Johnson Sur. T.D. 7,569 ft.; recompleting.

Humble O. & R. Co. No. 1 Partlow, H. B. Johnson Sur. Loc.

Sun Oil Co. No. 1 A. A. Hisey, H. B. Johnston Sur. T.D. 7,674 ft.; 7-in. csg. 7,644 ft.

Tide Water Associated Oil Co. No. 1 A. Cessena, A. B. Hardin Sur. Loc.

Bay City—Matagorda County

Hamman Explo. Co. No. 2 Crooke, E. Hall Sur. Top sd. 9,660 ft.; tstg.

Hamman Explo. Co. No. 2 G. M. Sloan, J. T. Belknap Sur. Drk.

Pan American Prod. Co. No. 1 Richers, I.&G.N. Sur. X-3. T.D. 9,689 ft.; 7-in. csg. 9,668 ft.

Smith & McDannald No. 2 Gaines, E. Hall Sur. T.D. 8,165 ft.; 7-in. csg. 8,074 ft.; comp.; no ga.

Palacios—Matagorda County

Atlantic Ref. Co. & McCarthy No. 3 Foley Ld. Co., L. Goodwin Sur. 7-in. csg. 8,635 ft.; T.D. 8,900 ft.; perf. csg. 8,820-43 ft.; tstg.

Sun Oil Co. No. 1 F. K. Robeson, L. Goodwin Sur. Drk.

Orange—Orange County

J. M. Campbell No. 1 Scales, Wm. Dyson Sur. T.D. 5,989 ft.; perf. csg. 5,903-13 ft.; flwd. oil; went dead; retesting.

Gulf Oil Corp. No. 1 O. Duhon, Wm. Dyson Sur. Drlg. sh. 5,065 ft.

Ryan & Thompson No. 1 Walter-McGill, Wm. Dyson Sur. Loc.

Shell Pet. Corp. No. 1 E. V. Loeffler, Wm. Dyson Sur. Drlg. sh. 5,312 ft.

Union Prod. Co. No. 2 Lutcher-Moore, Dyson Sur. 9⅝-in. csg. 5,162 ft.; drlg. sh. 6,268 ft.

Segno—Polk County

Gulf Oil Corp. No. 2 Ragan, I.&G.N. Sur 15. T.D. 6,704 ft.; 9⅝-in. csg. 5,587 ft. drlg. sd. 7,900 ft.

Gulf Oil Corp. No. 6 Wing, I.&G.N. Sur. No. 15. T.D. 5,190 ft.

Humble O. & R. Co. No. 8-B Kirby, M. Victor Sur. Drlg. sh. 5,230 ft.

Spurger—Tyler County

Republic Prod. Co.-Houston Oil Co. No 8 Hurd. N. Hurd Sur. 10¾-in. csg. 2,300 ft.; T.D. 7,695 ft.; 7-in. csg. 7,663 ft.

GULF COAST WILDCATS

Brazoria County

W. H. Christie et al No. 1 J. J. Settegast, F. Green Sur. Drlg. sh. 3,212 ft.

Albert Plummer No. 1 G. C. Street, H. M. Hunter Sur. 10¾-in. csg. 1,232 ft.; drlg. sh. 6,230 ft.

Pure Oil Co. No. 1 Clemons State Farm S. F. Austin 7⅛ Lge. 7⅝-in. csg. 1,955 ft.; drlg. sh. 6,512 ft.

Texas Co. No. 4 Freeport Sulphur Co., C. Arriola Sur. 10-in. csg. 1,214 ft.; T.D 3,900 ft.; P.B. 2,564 ft.; sdtrkd.; T.D. 3,000 ft.; P.B. to sdtrk.; cd. sd. oil odor 3,539-48 ft.; T.D. 3,894 ft.; P.B. and sdtrkd.; T.D. 3,935 ft.; abd.

Burleson County

Red Bank Oil Co. No. 1 Coffield, E. Sante Sur. Drlg. sh. 2,117 ft.

Chambers County

Geo. Anderson No. 1 Julia Casey, W. D. Smith Sur. Loc.

A. A. Cameron et al No. 1 White, Solmon Brill Sur. 10¾-in. csg. 1,500 ft.

Leverne Decker et al No. 1 Broussard Trust, sec. 30, H.T.&C. Sur. 10¾-in. 740 ft.; drlg. sh. 6,976 ft.

Fort Bend County

Lomack Oil Co. No. 1 G. W. Armstrong, S. Miller Sur. No. 2. Drk.

J. R. Spencer No. 1 H. Boyle, Thomas Westfall Sur. R.U.

Harris County

Chapman Mineral No. 1 O. Harris, Wm. Jones Sur. R.U.

W. S. Howell No. 1 Root, A. McCormick Sur. S.D. 2,807 ft.

O. W. Killam No. 1 J. J. Sweeney Est., G. Williams Sur. Drlg. sh. 3,110 ft.

West Prod. Co. No. 1 G. W. Sowden, J. Lindsey Sur. R.U.

Jackson County

Sam G. Harrison No. 1 J. Weodner, J. Williams Sur., Abst. 267. Drlg. sh. 4,343 ft.

Humble O. & R. Co. No. 1 J. R. Davis, I.&G.N. Sur. No. 20, Blk. 150. Drk.

Magnolia Pet. Co. No. 1 West Ranch, R. Musquez Sur. Drlg. sh. 8,156 ft.

H. J. Porter No. 1 J. W. Faust, Peter White Sur. T.D. 5,170 ft.; perf. csg. 2,655-60 ft.; tstg.

Jefferson County

I. E. Harwell No. 1 State, Gulf of Mexico. S.D. 5,420 ft.

Humble O. & R. Co. No. 1 State, Gulf of Mexico, sec. No. 8. R.U.

Matagorda County

J. K. Dorrance No. 1 M. Adamcik, I.&G. N. Sur. No. 1. Drk.

Pierce Est. et al No. 1 Paul Kruger, Nel. C. Warren Sur. T.D. 7,383 ft.; P. B.; sdtrkd.; drlg. sh. 6,510 ft.

Sun Oil Co. No. 1 Fred Robbins, C. F. Vandeveer Sur. T.D. 10,160 ft.; well tried to blow out; R.U. to rework.

Polk County

C. E. Gates No. 2 I. O. Jackson, J. W. Abbey Sur. Drk.

Wharton County

H. C. Cockburn et al No. 1 Hudgins, Mudoon Sur. No. 1. Drlg. sh. 6,310 ft.

Strake Pet. Corp. et al No. 1 W. N. Poole, H. J. Fry Sur. 10¾-in. csg. 1,484 ft.

S. W. TEXAS WILDCATS

Atascosa County

W. M. Allison No. 1 Nieschwietz, J. De La Garza Sur. 216. Drlg. 175 ft.

S.W.R. Corp. No. 1 Miller, J. Neill Sur. Drlg. sh. 390 ft.

Bastrop County

J. W. Bibb No. 1 Lentz, F. Wilkenson Sur. Top Austin Chalk with odor of oil 2,530 ft.; 5½-in. csg. 2,443 ft.; S.D. 2,550 ft.

R. C. Franklin No. 2 Yarrington, Jose Manuel Bangs Sur. S.D. 110 ft.

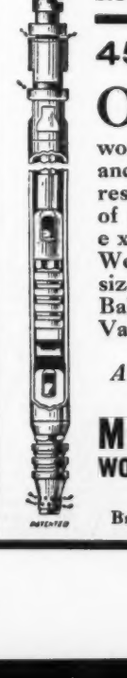
Humble O. & R. Co. No. 1 Hellsman, J. Cunningham Sur. Drk.

Texas Northern Oil Co. of Houston, Martin Wells Sur. R.U.

Bee County

Luling O. & G. Co. No. 1 Page, B. Q. Hadley Sur. Drlg. sh. 1,316 ft.

Union Prod. Co. No. 55 Ray, Geo. Kerr Sur. Cg. 3,665 ft.



McGREGOR

45 YEARS

OUR 15 Different types of working barrels and pumps are the result of 45 years of practical field experience. We also make all sizes and kinds of Balls and Seats, Valves, Cups, etc.

Ask for booklet.

McGREGOR WORKING BARREL COMPANY

Bradford, Pa. U.S.A.

Bexar County

Culver & Bender No. 1 Peterson, H. Virm Sur. T.D. 1,285 ft., L.; swbd. some oil; hole bridged.
Ralph Fair No. 1 Godda, J. H. Pickens Sur. S.D. 20 ft.
Harrison et al No. 1 Schuwerth, Jose Antonio De La Garza Sur. Drlg. sh. 1,155 ft.
Hikok & Reynolds No. 1 Elvert, Thomas York Sur. T.D. 1,670 ft.; 7-in. csg. 1, 142 ft.; T.D. 2,635 ft., sdy. L.
Joe H. Noake No. 1 Oppenheimer, W. Miller Sur. No. 180. 10-in. csg. 17 ft.; drlg. 170 ft.
Chas. Perayn No. 1 fee, Wm. Lindsey Sur. S.D. 1,600 ft.

Caldwell County

Banks Miller Oil Co. No. 1 Martindale, McNeil Sur. 18. T.D. 1,502 ft.; abd.
Mac-Wag-Tree Oil Co. No. 1 Roberts, W. House Sur. 5¼-in. csg. 2,517 ft.; T.D. 2,713 ft.; swbd. well; flwd. sulfur wtr. P.B. to test.
Mencill Pet. Co. No. 1 J. Wallinger Gedeon Pace Sur. Drlg. 1,567 ft.
C. R. Richardson No. 1 Schowe, T. Maxwell Sur., Abst. 188. Loc.

Cameron County

Sunset Prod. Co. No. 1 Port Isabel Irrig. Co. Sur. 30. Drk.

Dimmit County

Texas & Maryland Corp. No. 1 McKnight Blk. 13, sec. 23. Base of Austin Chalk 5,201 ft.; top Georgetown L. 6,120 ft.; T.D. 7,116 ft.; S.D. for csg.

Duval County

Atlantic Ref. Co. No. 1 Frank Gravis E. Gravis Sur., sec. 88. 10¾-in. csg. 747 ft.; cg. sh. 5,666 ft.
Conroe Drlg. Co. No. 1 A. Trevino, J. Poltevent Sur., sec. 1. Drlg. sh. 3,078 ft.
Frank Gravis No. 1 Megargal, J. Boyle Sur. 10-in. csg. 500 ft.; drlg. plug.
Magnolia Pet. Co. No. 1 W. K. Hoffman, sec. 111, S.A.&M.G. Sur. Cg. sh. 3,570 ft.
Pet. Prod. Co. No. 1-B Worden, J. L. Saen Sur. A-162. T.D. 1,503 ft.; S.D.
Rowan & Hope No. 1 C. K. Gravis, sec 90. Spd.
Sun Oil Co. No. 1 Ross, A.B.&M. Sur. M.I.M.
P. T. Wright No. 1 Hyatt, Sweden Farm Lots Subd. Drk.

Edwards County

Dan Auld No. 1 Henderson, sec. 46 [illegible] E. 7-in. csg. 1,865 ft.; drlg. sh. 4,005 ft.

Goliad County

Windward Oil Co. No. 1 Dreier, B.S.&F. Sur. No. 7. 10-in. csg. 1,000 ft.; T.D. 3,637 ft.; D.S.T. 3,632-37 ft.; blew out while drlg. 5,530 ft.; rng. wild; killed; B.P. to sdtrk.

Guadalupe County

Benstrasser No. 1 Eickenroht, A. Marrs Ensaurrezar Sur. R.U.
E. A. Hearn et al No. 1 Dudelof, Jas. Clements Sur. S.D. 720 ft.
N. G. Spiller No. 1 Wright Highsmith Drlg. 2,055 ft.

Hidalgo County

Gulf States Oil Co. No. 1 Cardenas, Juan Jose Balle Sur. 10¾-in. csg. 1,689 ft.; drlg. sh. 5,662 ft.
Hidalgo Prod. Co. No. 1 Daskam Corp. Porc. 45, Blk. 34. T.D. 1,507 ft.; run surf. csg.

Jim Hogg County

F. S. Adams No. 1 Martinez, sec. 623. R.U.

Jim Wells County

E. Calloway No. 1 Garcia, R. E. L. King Sur., sec. 54. Drlg. sh. 2,778 ft.

LEGAL

U. S. Department of the Interior, General Land Office, Washington, D. C. Notice is hereby given that the following lands are offered to the responsible qualified bidder of the highest bonus per acre, for leasing pursuant to section 17 of the act of February 25, 1920 (41 Stat. 437), as amended by the act of August 21, 1935 (49 Stat. 674), at the royalty rate scale in the lease form shown in Circular 1386: Carterville-Sarepta Oil and Gas Field, lot 2 Sec. 2, lot 4 Sec. 4, lots 3 and 4 Sec. 5, T. 22 N., R. 11 W., SE¼ NW¼ Sec. 31, T. 23 N., R. 11 W., La. M., 99.77 acres; Rodessa Oil and Gas Field, Unit No. 3, NW¼ SE¼ Sec. 5, T. 23 N., R. 15 W., 28.93 acres; Unit No. 4, SW¼ NE¼ Sec. 2, T. 23 N., R. 16 W., 27.96 acres. The sale will be held in the Federal Court Room, Post Office Building, Shreveport, Louisiana, at 12:00 noon on April 11, 1938. The successful bidder must deposit on the day of the sale a certified check on a solvent bank, or cash, for 1/5 of the amount of each bid, and file the showing of qualifications to receive a lease required by section 7 of General Land Office Circular No. 1386. The remaining 4/5, together with the annual rental in advance, at the rate of $1 per acre, must be paid prior to the issuance of the lease. The bidders are warned against violations of the provisions of section 59 of the U. S. Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. Fred W. Johnson, Commissioner.

Earl Calloway No. 1 Garcia, King Sur. R.U.
H. E. Howell et al No. 1 Goldapp, Jose Maria Garcia Sur. T.D. 3,644 ft.; 5½-in. csg. 3,602 ft.; reperf. csg. 3,546-60 ft.; flwg. gas and wsh. wtr. through ¼-in. ck.; C.P. 600 lbs.; S.I.; no ga.
H. H. Howell et al No. 1 Lindsey & Reed, Lavaca Gr. Sur. Spd.
Magnolia Pet. Co. No. 8 Seeligson, A. Rameriz Sur. 13⅜-in. csg. 1,206 ft., 9⅝-in. csg. 6,155 ft.; cg. sh. 6,586 ft.
Homer Presnall et al No. 1 Banker Mortgage Co., Jose Maria Garcia Sur. T.D. 651 ft.; W.O.C.
Rowan & Hope No. 2 Adams, T.&N.O. R.R. Sur. T.D. 3,252 ft.; perf. csg. 3,215-20 ft.; tstg.

Kleberg County

Pure Oil Co. et al No. 1 State Ld., Tr. 68, Laguna Madre Bay, Lse. No. 5 [illegible] Dredging canal.

Lee County

Elecoussa Oil Co. No. 1 Sanders, J. Vin Roeder Sur. Drlg. L. 4,278 ft.

Live Oak County

James Chew No. 1 Alma McNeil, Alexander Parks Sur. 7-in. 5,076 ft.; T.D. 5,290 ft.; perf. csg. 5,078-79 ft.; flwg. gas.
Culton et al No. 2 Wedding, Bridget Houghey Sur. S.D. 2,800 ft.
Louis Franklin No. 1 Russell, John Hefferman Sur. R.U.
Karotkin & Richardson No. 1 Pape, Wm. R. Conner Sur. S.D. 1,987 ft.
Ray L. Martin No. 1 Adams, J. Buchannan Sur. Drlg. sh. 1,112 ft.; no report.
J. I. Newton No. 1 George West Est., Airy Pieratt Sur. No. 129. Cg. 1,819 ft.
J. P. Payzor No. 1 San Antonio Joint Stock, J. J. Roberts No. 1 Mahone. S.D. 2,000 ft.
V. G. Schimmel et al No. 1 Geo. West, G. L. Haas Sur. S.D. 210 ft.
Unit Pet. Co. No. 1 Terrell, Mark Kelley Sur., Abst. 20. Drlg. 212 ft.

McMullen County

Duncan Drlg. Co. No. 1 Martin Henry, sec. 6. S.D. 707 ft.
Mills Bennett Prod. Co. No. 3 Nueces Ld. & Livestock Co., H.T.&B. Sur., Blk. 3. T.D. 1,511 ft.; abd.
Thad-Day No. 1 Wulf, sec. 77. T.D. 2,018 ft.; abd.

Medina County

Ewing Oil Co. No. 1 Riff, Sur. 42. R.U.
J. R. Trentman et al No. 1 Carle Merc Co., V. A. Johnson Sur. Cg. L. 1,860 ft.

Milam County

Texedo Oil Co. No. 1 Graham, Charles Cornea Sur. Logged S.O. 1,135-36 ft.; S.D. 1,560 ft.
Texedo Oil Co. No. 1 Paul Garves, C. Robertson Sur. S.D. 1,170 ft.

Nueces County

Corpus Christi Ref. Co. No. 1 J. R. Howington, O. and M. Oliver Sur. No. 156. 10¾-in. csg. 527 ft.; S.D. 5,268 ft.
Renwar Oil Corp. No. 1-A Kennedy, D. Martinez Sur. Drlg. sh. 3,212 ft.
Richardson Pet. Co. No. 2 H. B. Baldwin, E. Villareal Sur. No. 1. Drlg. sh. 6,831 ft.

Refugio County

Barnsdall Oil Co. No. 1 C. H. Fagan, Nicholas Fagan. Drlg. sh. 5,830 ft.
Continental Oil Co. No. 1 Scott Hrs., Dona A. Reogas Sur. 10¾-in. csg. 1,490 ft.; T.D. 8,017 ft.; abd.
Hogan Oil Co. No. 2 Kelly, J. Powers Sur. Drlg. sh. 5,727 ft.
H. J. Porter et al No. 1 Lambert, J. Powers and Hewitson Sur. R.U.

San Patricio County

A. L. Bob No. 2 Green, T. T. Williamson Sur. S.D. 7,100 ft.
D. W. Moore No. 1 Kelly, J. H. Drummon Sur. T.D. 7,002 ft.; abd.
G. E. Smith No. 1 French, Henry S. Day Sur. Cg. S.W. sd. 5,058 ft.

Starr County

J. L. Collins No. 1 Francisco B. Guerra, Santa Cruz Gr. T.D. 6,609 ft.; well blew out; rng. wild; showing gas.
Scaraborough et al No. 1 Haden, Jose De La Garza Sur. R.U.
Sun Oil Co. No. 2-D Guerra, La Sacatosa Gr., 2 mi. SW of Cuevitas field. Drlg. sh. 2,110 ft.

Victoria County

W. V. Bowles No. 2 Robertson, T. C. Burnham Sur. R.U.
Harry L. Edwards No. 1 Robertson, T. C. Burnham Sur. T.D. 5,624 ft.; P.B. 5,102 ft.; comp. for gas well.
Portilla Drlg. Co. No. 1 P. H. Welder, S.A.&M.G. Sur. R.U.
Superior Oil Co. and L. A. Gillespie No. 1 J. Carroll, J. F. Johnson Sur. Drlg. sh. 2,620 ft.

Webb County

Gilcrease Oil Co. No. 1 Trofton, M. Lopez Sur. 282 ft. 10¾-in. csg. 46 ft.; T.D. 1,945 ft.; fsg.
W. S. Hill No. 1 Adami, A.B.&M. Sur. 345. Core sd. 1,020 ft.; no report.

Willacy County

C. C. Bonner No. 1 Lewis, W. P. Rutledge Sur. 460. Loc.
French Oil Co. No. 4 Benavides, G.C.S. D.&R.G.N.G. Sur. 1121. R.U.
Magnolia Pet. Co. No. 1 Armendaiz, San Juan DeCarricitos Gr., Sh. 4. T.D. 9,635 ft.; W.O.C.
Salvieja Oil Corp. No. 2 Garcia Ld. Co. Blk. 118. Drlg. S.W. sd. 7,140 ft.

Zapata County

R. B. Bryant No. 1 Flores, La. Huerta Sur. Drk.
Falcon Oil Co. 1⅛ Aquire, Sh. 28-A. Drlg. 2,278 ft.

EAST TEXAS

(Border Counties)

Rodessa—Cass County

Bay Oil Co. No. 5 Cobb, G. Crowder Sur. Set 7-in. csg. 6,054 ft.; T.D. 6,119 ft.; comp.; 282 B.P.D.; ¼-in. ck.
Bay Oil Co. No. 2 E. Parker, G. Crowder Sur. Set 7-in. csg. 6,010 ft.; tstg. 6,068 ft.
G. H. Chamblee No. 1 White & Walker, R. Potter Sur. Drlg. anhy. 5,730 ft.
Magnolia Pet. Co. No. 12 Rives, John Collum Sur. Set 7-in. csg. 6,035 ft.; T.D. 6,047 ft.; comp.; 401 B.P.D.; ¼-in. ck.; T.D. 6,047 ft.

Bowie County

King Oil Corp. No. 1 Watts, Geo. Brinlee Sur. Drlg. 3,856 ft.

Cass County—Other

Vincent Hughes No. 1 P. C. Lyster, Bateman Sur. T.D. 4,400 ft.; set csg.; swbd. dry; P.B. 3,900 ft.

Harrison County

Ark.-La. Gas Co. No. 1 C. M. Abney, E. Little Sur. T.D. 4,820 ft.; set 7-in. csg. 2,350 ft.; drlg. 2,867 ft.

Marion County—Rodessa

Ark.-La. Gas Co. No. 1 Hill, Gillespie Sur. Drlg. L. 3,754 ft.
Arkansas-Louisiana Gas Co. No. 1 Hollands, Hanks Sur. Set 7-in. csg. 6,092 ft.; T.D. 6,121 ft.; P.B. 6,112 ft.; tstd. S.W.; perf. 7-in. csg. 6,090-95 ft.; tstd. S.W. and S.O.&G.; sqze. job.
Ark.-La. Gas Co. No. 2 Holland, Hanks Sur. Set 10¾-in. csg. 1,016 ft.
Ark.-La. Gas Co. No. 1 Howard, Thos. Gillespie Sur. Drlg. L. 5,940 ft.
Ark.-La. Gas Co. No. 1 Pitts, C. Lockhart Sur. Drlg. L.&sh. 5,134 ft.
Geo. Barham No. 1 Beard, R. Bennington Sur. Comp.; 17 B.P.H.; ¼-in. ck.; T.D. 6,021 ft.
Dunn & Fisher No. 1 Neilson, Gentry Sur. Drlg. sh.&L. 4,903 ft.
Dunn & Fisher No. 1 G. F. Whitfield, Bennington Sur. Drlg. L.&sh. 4,976 ft.
Geo. Echols No. 1 Whitfield, R. Bennington Sur. Comp.; 20 B.P.H.; ¼-in. ck.; T.D. 6,106 ft.
Flesh & Hootkins No. 1 Whitfield, Bennington Sur. Comp.; 16 B.P.H.; ¼-in. ck.; T.D. 6,065 ft.
Gulf Oil Corp. No. 2 Grubaugh, Coy Sur. R.U.
Gulf Oil Corp. No. 3-A Henderson, Bennington Sur. Set 7-in. csg. 6,009 ft.; T.D. 6,036 ft.; comp.; 481 B.P.D.; ¼-in. ck.
Gulf Oil Corp. No. 4-A Henderson, Bennington Sur. Set 13⅜-in. csg. 30 ft.; W.O.C.
Gulf Oil Corp. No. 1-A Ray, Hanks Sur. Comp.; 20 B.P.H.; ¼-in. ck.; T.D. 6,081 ft.
Heyser, Heard & Clardy No. 1 Brantley, Bennington Sur. Drlg. sh.&L. 5,369 ft.
Heyser, Heard & Clardy No. 2-B Henderson, Ewing Sur. Drlg. sh.&L. 4,890 ft.
Hollandsworth Drlg. Co. No. 2 Hill, Smith Sur. Comp.; 25 B.P.H. on ¼-in. ck.; T.D. 6,010 ft.
Phillips Pet. Co. No. 1 Benefield, Hanks Sur. Cg. 6,015 ft.
Phillips Pet. Co. No. 1 Denton, Coy Sur. T.D. 6,183 ft.; comp.; 18 B.P.H.; ¼-in. ck.
Phillips Pet. Co. No. 1 Henderson, Gillespie Sur. Drlg. anhy.&sh. 5,410 ft.
J. C. Robbins et al No. 1 J.&N.W. Ry., Bennington Sur. Drlg. sh.&L. 4,371 ft.
Shell Pet. Corp. No. 1 Schluter, W. Smith Sur. Drlg. 2,275 ft.
Shell Pet. Corp. No. 1 Whelan, Thos. Gillespie Sur. Drlg. L.&anhy. 5,688 ft.
Union Prod. Co. No. 6 Hutchinson, Coy Sur. Drlg. sh.&L. 5,174 ft.
Union Producing Co. No. 7 Hutchinson, Coy Sur. Drlg. sh. 2,577 ft.

Panola County

Logansport P. L. Co. No. 1 Rushing Est., Smith Sur. Drlg. 3,215 ft.
H. E. Preston et al No. 1 Rushing Est., Manning Smith Sur. T.D. 3,028 ft.; M.I. rig.
Texas Co. No. 1 Claude Adams, T. Cox Sur. T.D. 5,940 ft.; set 9⅝-in. csg.

Shelby County

Joe Burnham No. 1 George, Tutt Sur. Drlg. 3,370 ft.

WEST TEXAS WILDCATS

Andrews County

J. Donnelly et al No. 1 University, sec. 16, Blk. 14, University Sur. Moving in rotary 190 ft.
Humble O. & R. Co. No. 1 Kuykendall, sec. 24, Blk. 46-A, P.S.L. Sur. Tstg. 4,511 ft.
Rogers & Rogers No. 1 O. B. Holt, P.S.L. Sur. Tstg. 4,541 ft.
Seaboard Oil Corp. No. 1 Munger-Nix sec. 1, Blk. A-4, P.S.L. Sur. S.D. 4,526 ft.
Seaboard Oil Corp. No. 1 Thornberry, sec. 8, Blk. 42-A, P.S.L. Sur. R.U.R. 168 ft.
H. C. Wheeler No. 1 T. M. Gardner, sec. 15, Blk. A-35, P.S.L. Sur. Drlg. 1,845 ft.

Bailey County

Duffey & Etz No. 1 Enochs, Tract 66, League 182, Floyd Co. School Lands Sur. P.B. 3,976 ft.

Brewster County

F. C. Dodson No. 1 Texas American Synd., sec. 66, Blk. 10, G.H.&S.A. Sur. Fsg. 7,415 ft.
Storey No. 1 Wilson, sec. 3, Blk. 212, T.&St.L. Sur. S.D. 2,545 ft.

Cochran County

J. R. Meeker et al No. 1 Wright, Mills City Sch Ld. Drlg. plug 4,930 ft.
Texas Co. No. 1 Mallett Ld. & Cattle Co., sec. 7, Blk. G, P.S.L. Sur. Drlg. 2,930 ft.
P. N. Wiggins et al No. 1 Dean, NE cor. League 58, Martin Co. School Lands. Tstg. 5,077 ft.

Coke County

Barnett Pet. Co. No. 1 J. R. Mims, sec. 38 Blk. W, T.&P. Sur. Drlg. 1,822 ft.
H. E. Ogden et al No. 1 Rawlins, sec. 390 Blk. B-21. Drlg. 2,700 ft.

Concho County

Barnett Oil Dev. Co. No. 1 Sims, Abst. 851, Carl Thiele Sur. S.D. 162 ft.
Sam Murray No. 1 R. G. Armor, sec. 105, T.&N.O. Sur. S.D. 495 ft.

Cottle County

Wilcox O. & G. Co. No. 1 Richards et al, sec. 761, Blk. Y, W.&G. Sur. S.D. 275 ft.

Crockett County

W. L. Bradley et al No. 1 Hoover, sec. 1, Blk. 1. R.U.M.
Choate & Hogan No 1. University, sec. 17, Blk. 14, University Sur. Drlg. 149 ft.
Moore Bros. No. 1 Perner, sec. 37, Blk. 2, I.&G.N. Sur. Drlg. 9,086 ft.
J. N. Simpson No. 1 Hoover, G.C.&S.F. Sur. Drlg. bridge 1,931 ft.
Stewart & Cormas No. 1 Hoover, sec. 1, Blk. FF, B.B. Sur. Tstg. 1,931 ft.
W. F. Yates No. 1 Hoover, sec. 6, blk. 1, G.C.&S.F. Sur. Sp.&sd.

Culberson County

Grisham & Hunter No. 1 fee, sec. 14, Blk. 42, P.S.L. Sur. Drlg. 498 ft.
Grisham Hunter No. 1 Caldwell, sec. 14, Blk. 42, P.S.L. Sur. Drlg. 325 ft.
Harry J. W. Nichaus No. 1 C. M. Caldwell, sec. 15, Blk. 109, P.S.L. Sur. Drlg. 55 ft.

Dawson County

Albaugh No. 1 Robinson, E.L.R.R. Sur. T.D. 5,038 ft.; tstg.
Atlantic No. 1 Scanlan, sec. 83, Blk. M, E.L.R.R. Sur. P.B. from 4,965 ft. to 4,932 ft.; S.D. 4,965 ft.

Dickens County

J. F. Marrisey No. 1 I. J. McMahan, sec. 319, Blk. 1, H.&G.N. Sur. Loc.

Ector County

Bodins et al No. 1 Edwards. Drlg. 4,600 ft.
Melhoan Drlg. Co. No. 1 Gulf Blakeney. Cg. 4,118 ft.
Stogner et al No. 1 Hendrick, sec. 4, Blk. 43, T.&P. Sur. Drlg. 735 ft.
L. H. Wentz Oil Co. No. 1-B Parker. P.B. 4,210 ft.
Wentz Oil Co. No. 2-D Parker. S.D.O. 4,802 ft.; C.O. 800 ft.; O.I.H.

Edwards County

A. P. Carter No. 1 F. D. Sweeten, B.&B. Sur., 2 mi. E of Rock Springs. Drlg. 6,301 ft.
Lyles & Dan Auld No. 1 Henderson, H.E. &W.T. Sur. S.D. 3,200 ft.
Richmond Drlg. Co. No. 1 Brown, G.W. T.&P. Sur. S.D.O. 5,750 ft.

El Paso County

Tri-State Oil Co. No. 1 Kinkel. Running 4-in. 3,571 ft.

Fisher County

Daniel & Rhodes No. 1 Nichless, Geo. W. Lawrence Sur. S.D. 3,340 ft.
General Crude Oil Co. No. 1 Morrow, sec. 185, Blk. 2, H.&T.C. Sur. Drlg. 3,537 ft.
S. & D. Daube and Forrest Dev. Co. No. 1 A. C. Bennett, sec. 51, Blk. 2, H.&T.C. Sur. Loc.
Southern Oil Co. No. 1 Bocat, H.&T.C. Sur. S.D.O. 4,016 ft.

Floyd County

Mills Bennett No. 1 T. Montgomery, F. J. Latham Sur., 6 mi. S of Floydada. Drlg. 3,100 ft. by side whipstock.

Gaines County

Amerada Pet. Corp. No. 1 R. W. Robertson, sec. 196, Blk. G, W.T.R.R. Sur. Drlg. by tools 5,112 ft.
Continental No. 1-45 Moore, sec. 45, Blk. AX, P.S.L. Sur. Show of gas 4,777 ft.
Eastland Oil Co. No. 1 R. C. Dunbar, sec. 24, Blk. A-12, P.S.L. Sur. M.I.M.
M. B. K. Drlg. Co. No. 1 A. L. Wasson, sec. 52, Blk. AX, P.S.L. Sur. Running 12¼-in. 206 ft.
Shell Pet. Corp. No. 1 M. B. Robinson, sec. 344, Blk. G, C.C.S.D.&R.G.N.G. Sur. Drlg. 5,264 ft.

Garza County

Gulf Oil Corp. No. 1 Swanson, sec. 25, Blk. 2, H.&G.N. Sur. W.O.C. 1,760 ft.

Glasscock County

O. B. Greathouse No. 1 Burns, sec. 221, Blk. 29, W.&N.W. Sur. M.I.S.T.
O. B. Greathouse No. 1-211 Burnes, sec. 211, Blk. 29, W.&N.W. Sur. Loc.

Hockley County

Gulf Oil Corp. No. 1 M. G. Gordon, sec. 13, Blk. X, P.S.L. Sur. Drlg. 5,004 ft.
Gulf Oil Corp. No. 1 Mallett Ld. & Cattle Co., sec. 6, Blk. X, P.S.L. Sur. Drlg. 4,963 ft.
Honolulu Oil Co. No. 1-51 Dorthy Slaugh-

ter, Labor 51, League 37, Zavalla Co. Sch. Lds. Tstg. 4,970 ft.
Honolulu Oil Co. No. 1-77, Labor 77, League 37, Zavalla Co. Sch. Lds. Drlg. 4,390 ft.

Howard County

Lockhart Oil Co. No. 1 Hussinger, sec. 67, Blk. 29, W.&N.W. Sur. S.D. 2,925 ft.
W. F. McDermott et al No. 1 Lucas, sec. 18, Blk. 29, Twp. 1n, T.&P. Sur., 5 mi. N of Dodge pool. Drlg. 3,077 ft.
Moore Bros. No. 1 W. P. Edwards, sec. 44, Blk. 30, T.&P. Sur. C.&P.
Texas Co. No. 1 H. H. Wilkinson, sec. 32, Blk. 34, T.&R. Sur. Drlg. 35 ft.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ sec. 34, Blk. 74, Twp 6. Drlg. 4,175 ft.
Haymon Krupp No. 1 Briggs, sec. 24, Blk. 73, Twp. 7, T.&P. Sur. U.R.

Jeff Davis County

Joiner Oil Corp. No. 1 Jones-Coffield. U.R. 3,500 ft.

Kent County

Thad A. Bryant Jr. No. 1 Haggins et al, sec. 118, Blk. 1, H.&G.N. Sur. Bldg. drk.
Thad A. Bryant, Jr., No. 1 House, sec. 10, Blk. 1, H.&G.N. R.R. Sur., 6,000-ft. test. Drlg. 200 ft.

Kerr County

A. E. Edmiston et al No. 1 J. H. Saul, sec. 47, T.W.N.G. Sur. Spdg.

Lamb County

Toddie L. Wynne, Tr. No. 1 Neuenschwander, Labour 1, League 660, State Cap't. Lds. S.D.; drill pipe stuck 3,295 ft.

Loving County

Barnett Pet. Co. No. 1-A Johnson, sec. 2, Blk. 57, Twp. 1, T.&P. Sur. Drlg. 3,900 ft.
Bryant-Caraway et al No. 1 House, Pre-Emption Sch. Lds., sec. 10. Setting surface csg.
Carpenter & Grierson No. 1 Mrs. Bennie Barnes, sec. 22, Blk. C-25, P.S.L. Sur. Loc.

Lynn County

John L. Baldridge No. 1 Alma Lbr. Co. sec. 151, H.E.&W.T. Sur. S.D.O. 4,415 ft.

McCulloch County

Westbrook et al No. 1 Johnson, A. Nevendorf Sur. S.D. 1,836 ft.

Martin County

Harris-Anderson Oil Corp. No. 1 Mollie Robinson, sec. 33, Blk. 38, T.&P. Sur. S.D. 4,189 ft.

Menard County

G. A. Clements No. 1 Murchison, sec. 80 B.S.&S. Sur., 8 mi. E of Menard. S.D.O. 1,320 ft.
C. D. Haggerty No. 1 Callon, sec. 36, Jim Franz Sur. S.D. 200 ft.

Pecos County

Harry Baker et al No. 1 White & Baker, sec. 53, Blk. 194, C.C.&S.F. M.I.M.
J. J. Dorr et al No. 2 Payton, sec. 99, Blk. 8, H.&G.N. Sur. Cellar and pits.
Ed Falney No. 1 Trees, sec. 63, Blk. 8, H.&G.N. Sur. Fsg. 2,055 ft.
Magnolia Pet. Co. No. 1 McKee. Running tbg. 5,330 ft.
E. R. Minshall et al No. 1 Haynie, sec. 28; Blk. 146, T.&St.L. Sur. M.I.M.
S. Thompson No. 1 Elsinore Cattle Co., sec. 54, Blk. D, G.C.&S.F. Sur. Fsg. 7,212 ft.
Trans-Pecos Oil Co. No. 1 Gallagher, T.&P. Sur. Drlg. 1,860 ft.
Trans-Pecos Oil Co. No. 3-A Papham, G.H.&S.A. Sur. Drlg. 2,024 ft.
Wilcox O. & G. Co. No. 1 Serf, sec. 27, Blk. 130, T.&St.L. Sur. Drlg. 2,850 ft.

Presidio County

L. C. Brite No. 4 fee, C NW¼ sec. 113, Blk. 12, G.H.&S.A. Sur. Drlg. 4,420 ft.

Reeves County

Barnett Pet. Corp. No. 1 Ely, sec. 38, Blk 71, P.S.L. Sur., 12 mi. NW of Toyah. S.D. 4,223 ft.
Grisham Hunter Corp. & N. A. Grisham No. 1 Geo. Daniel, sec. 40, Blk. 58, T.&P. Sur. S.D. 730 ft.
Ohio Oil Co. No. 1 Papham, sec. 18, Blk. 54, T.&P. Sur. Drlg. 1,780 ft.

Runnels County

Beaudoin & Cannon No. 1 Geisecke, J. Hughes Sur. Prep. deepen 2,503 ft.
E Z Oil Co. No. 1 B. Fletcher, E. C. Good Sur. T.D. 4,394 ft.; P.B. to 4,360 ft.; S.D.O. 4,384 ft.
Stevens & Glober No. 1 Fowler, sec. 150, E.I.R.R. Sur. Running 8¼-in. 1,120 ft.

Schleicher County

J. M. Cooper No. 2 B. Page, sec. 40, Blk. L, G.H.&S.A. Sur. S.D. 5,004 ft.
Tex-Tor Oil Corp. No. 1 Judkins & Spencer, C of SW¼ sec. 33, Blk. A, A.&B. Sur. Drlg. 6,320 ft.

Scurry County

Robinson Drlg. Co. No. 1 Martin, sec. 147, H.&T.C. Sur. S.D. 3,513 ft.
T. G. Shaw Oil Co. No. 1 First Natl. Bank. Fsg. 2,420 ft.

Sterling County

Loffland Bros. & Moore Bros. No. 1 D. D. Parramore, sec. 23, Blk. 2, H.&T.C. Sur. R.U.S.T.
J. W. Sward No. 1 Brennand, sec. 107, Blk. 2, H.&T.C. Sur. Drlg. 850 ft.

Stonewall County

Bert Fields No. 1 J. M. Lee, J. E. Pierson Sur. M.I.M.
General Crude Oil Co. No. 1 J. D. Smith, sec. 371, Blk. 2, H.&T.C. Sur., 12 mi. N Rotan. Drlg. 3,190 ft.
Swanson & Parriott No. 1 H. T. Carlisle sec. 293, Blk. D, H.&T.C. Sur. W.O.C. 3,345 ft.

Sutton County

A. A. Basse and S. J. Sackett No. 1 W. A. Miers, sec. 54, Blk. 14, T.W.&N.G. Sur. S.D. 55 ft.
Ordovician Oil Co. No. 1 Evans, sec. 1, L. Stubblefield Sur., 32 mi. SE of Sonor. Drlg. 4,125 ft.; topped Ellenburger 4,085 ft.

Terrell County

D. & S. Oil Co. No. 1 Sam Bell. S.D. 960 ft.

Tom Green County

Humble O. & R. Co. No. 1 Lewis & Warlaw, sec. 5, Blk. 17, H.&T.C. Sur. Reaming 6,963 ft.
Southern Cross Oil Co. No. 1 J. W. Wilson, sec. 30, Blk. H, A.B.&M. Sur. Loc.
Spinner No. 1 Reed, Mason Ferry Ranch Sur. Drlg. 3,890 ft.

Upton County

Holland & Maverick No. 1 Halff, sec. 6, Blk. A, C.C.S.D.&R.G.N.G. Sur. Drlg. 2,260 ft.
W. D. Riser et al No. 1 King Ranch Oil & Lignite Co., sec. 8, Blk. 3, M.K.&T. Sur. S.D. 730 ft.
Rutter et al No. 1 Egolb, sec. 5, J. H. Gibson Sur. Blg.; T.D. 3,294 ft.; S.D.O. 3,295 ft.
J. S. Pitman No. 1 D. Elder, C.C.S.D.& R.G.N.G. Sur., Blk. 3, sec. 14. S.D.O. 3,065 ft.

Val Verde County

J. F. Carter et al No. 1 Seller & Sons, sec. 34, Blk. A, I.&G.N. Sur. R.U.S.T.

Ward County

Cities Service No. 2 Brandenburg, sec 4, Blk. 32, H.&T.C. Sur. Prep. run tubing 2,096 ft.
M. J. Delaney No. 1 J. E. Cooper, H.&T.C. Sur. Tstg. 2,092 ft.
J. E. Fitzpatrick et al No. 1 H. B. Carr sec. 125, Blk. 34, H.&T.C. Sur. S.D.R. 1,115 ft.
J. E. Fitzpatrick et al No. 1 F. K. Dyer sec. 135, Blk. 34, H.&T.C. Sur. S.D.R. 2,500 ft.
Hoss & Downey No. 1 Meyers, sec. 17, Blk. 32, H.&T.C. Sur. Spd. and S.D.
Hoss & Downey No. 1 Ross Avery, sec 36, Blk. 1, H.&T.C. Sur. S.D. 1,775 ft.
Mahree No. 1 Wilson, sec. 133, Blk. 34, H.&T.C. Sur. Prep. deepen 5,094 ft.
Patillo & Webster No. 1 Johnson. Tstg. 1,990 ft.
Sayre Oil Co. No. 1 Bertner, sec. 34, Blk. 1, H.&T.C. Sur. Drlg. 240 ft.
O. E. Schkode No. 1 Boogher, sec. 1, Blk. 32, H.&T.C. Sur. Drlg. 160 ft.
L. F. White et al No. 1 Rector-Monroe, E cor. sec. 3, Blk. 1, W.&N.W. Sur. S.D. 4,710 ft.

Winkler County

Ed. L. Gelder No. 1 R. D. Kessler & F. Kessler, sec. 14, Blk. B-3, P.S.L. Sur. Loc.

Yoakum County

Bahago & Bond Oil Corp. No. 1 J. L. West, sec. 607, Blk. D, J. H. Gibson Sur. S.D.O. 5,393 ft.
Gulf No. 1 J. C. Futch, sec. 796, Blk. D, J. H. Gibson Sur. Cg. 5,067 ft.
Humble No. 1 Abilene State Bank, sec. 37, Blk. AX, P.S.L. Sur. Tstg. 5,005 ft.
Ohio No. 1 Claywater, sec. 638, Blk. D, J.H. Gibson Sur. R.U.R.
Shell No. 1-C Baumgart, sec. 866, Blk. D, J. H. Gibson Sur. Tstg. 5,018 ft.
Texas Co. No. 1 Walker, sec. 794, Blk. D El. 3,656 ft.; T.D. 5,180 ft.; P.B. 5,162 ft.; S.D. 5,162 ft.
Stogner & Pipkin No. 1 Blade, J. H. Gibson Sur. S.D.O. 5,307 ft.

E. C. TEXAS WILDCATS

Anderson County

Tide Water-Seaboard No. 2 J. Reagan, J. Adams Sur. Drlg. 931 ft.

Angelina County

J. C. Bonham No. 1 Cameron Lbr. Co., E. Miller Sur., 3 mi. SE of Zavalla. S.D. 1,630 ft.
J. C. Bonham No. 3 Cameron Lbr. Co., E. Miller Sur., 3 mi. SE of Zavalla. Drlg. 420 ft.
Ginter Co. No. 3 Copes Heirs, J. Morin Sur., 4 mi. E of Dibol. Flowing 10 B.O. P.D., 2,200 ft.
B. L. Hoffman No. 1 Jones, W. W. Hales Sur., 8 mi. SW of Huntington. Drk.
C. E. Parrott No. 1 J. C. Burres, W. Plucker Sur., 2½ mi. W of Huntington. Drk.

Cherokee County

J. G. Mayo et al No. 1 J. H. Bowlery, W. H. Walters Sur. Drlg. 2,900 ft.
Merica Oil Co. No. 1 New Birmington Dev. Co., Levi Jordan Sur., ¾ mi. S of Rusk. Bldg. drk.
Merica Oil Co. No. 1 Cherokee Dev. Co., A. J. Acker Sur., 2 mi. E of Maydelle. Drlg. 5,022 ft.

Dallas County

Plaza Oil Co. No. 1 Davidson, Marchants Sur., 1 mi. NW of Seagoville. Drlg. 1,950 ft.

Falls County

McCleod et al No. 1 F. Bolton, J. R. Cockrill Sur., 4 mi. NW Rosebud. Fsg. 1,708 ft.

Franklin County

White-McGee & Harper No. 1 Harper, W. N. Dawson Sur., on Franklin-Hopkins Co. line, 6 mi. SW of Hagansport. R.U.

Freestone County

C. E. Rossiter No. 1 J. P. Fulton in J. P. Fulton Sur., 2½ mi. E of Donie. S.D 956 ft.

Gregg County

Humble O. & R. Co. & Gulf O. Corp. No. 1 E. Robertson, M. Mann Sur., 2½ mi. SW of Longview Trinity test. El. 273 ft.; drlg. 9,103 ft.

Henderson County

Howard Pet. Co. No. 1 H. W. Barton, A. J. Allen Sur. Drlg. 3,820 ft.
S. B. Howard et al No. 1 T. C. Self, F. Brown Sur., 3 mi. SW of Athens. R.U.
Jones-Mallory No. 1 A. Mallory, T. S. Mitchell Sur., 6 mi. SW of Mabank. W.O.C. 107 ft.

Hill County

J. Willis No. 1 W. P. Ball, S. Marshall Sur., 3 mi. NW of Covington. M.I.M.

Houston County

Peyton Bros. No. 1 J. N. Daniels, J. M. Procella Sur., ½ mi. N of Procella. Drlg. 3,690 ft.

Lamar County

Cooper Bros. No. 2 L. B. Hayes, L. Roberts Sur. Temp. abd. 703 ft.

Leon County

Lone Star Gas No. 1 Sarah Melasky, 1 mi. S of Buffalo pool. Tstg. 5,828 ft.

Limestone County

J. L. Brown No. 27 N. B. Boyd, R. B. Longbotham Sur., 3 mi. S of Wortham. T.D. 1,402 ft.; oil sd.; P.B.; tstg.
J. S. Cosden, Jr. No. 1 J. J. Bower, J. Breeding Sur., near Prairie Hill. Drlg. 560 ft.
Stanolind O. & G. Co. No. 1 T. Norris, in Thresher Sur., 5 mi. N of Kosse; 6,500-ft. test; elev. 528 ft.; S.D.W.O. 9,951 ft.

McLennan County

Chapman & Kahn No. 1 Carl Hartsman, B. C. Walters Sur., 1½ mi. S of McGregor. Drlg. 810 ft.
Kilgore No. 1 J. M. Marrs, J. S. Rutland Sur., 2 mi. S of Bosque. Drlg. 1,130 ft.

Navarro County

G. W. Gibson No. 1 J. H. Edgar, M. Meazel Sur., 2½ mi. S of Richaland. Drlg. 150 ft.
Natural Pet. Co. No. 1 Karen Brown, W. T. Turner Sur., 2 mi. E of Roane. S.D. 1,735 ft.
Mrs. Jane Robinson No. 1 Fortson Bros. Eli Smith Sur., 5 mi. NE Corsicana. Drlg. 2,515 ft.
T. Sharpe et al No. 1 E. B. McDowell, T. Jordan Sur., 1½ mi. S of Bassets. S.D. 3,160 ft.

Smith County

H. L. Hunt et al No. 1 S. H. Bradly, T. P. Payne Sur., 10 mi. E of Tyler at Chappel Hill. Drlg. 2,915 ft.
Mayo-Housh & Thompson No. 1 J. B. Mayfield, Wm. Keys Sur., 4 mi. SE of Tyler. S.D.W.O. 4,943 ft.

Titus County

Lee Umbernhour No. 1 J. M. Sykes, J. Mathews Sur., 1 mi. N of Winnsboro. Drlg. 1,865 ft.

Trinity County

Bilinoski et al No. 1 Trinity State Bnk., B. F. Wright Sur., 2 mi. S of Trinity. S.D. 120 ft.

Upshur County

Tom Hunter and American Liberty No. 1 J. P. Carter, J. H. Fields Sur. S.D. W.O. 7,933 ft.

NORTH TEXAS WILDCATS

Archer County

A. H. Bedinghaus No. 1 J. L. Anderson, Blk. 23, S.A.R. Sur. 10-in. 80ft.; W.O.C.
Hull & Silk No. 1 L. F. Wilson, sec. 25, A.T.N.C.L. Sur. 6⅝-in. 3,830 ft.; O.S. 3,841-58 ft.; drld. plug and well flowed 127.41 bbls. in 1 hr.; now running tbg.
Kilgore-Luginbyhl & Johnson No. 1 Ford, T. M. Cecil Sur. A-982. 4,500-ft. test; drlg. 2,271 ft.
Wayne King et al No. 1 C. A. Arthur, sec. 3, G.H.&H. Sur. A-158. S.D. 210 ft.
Lewis Prod. Co. No. 1 W. C. Frey, sec. 17, P.P.S.L. Sur. 6⅝-in. 3,978 ft.; sdy. L. 3,973-82 ft.; test showed oil; drlg. sh. 4,095 ft.

Baylor County

D. S. Kelly No. 1 W. T. Waggoner, sec. 54, T.&N.O. Sur. S.D.O. 1,200 ft.
Wilcox O. & G. Co. No. 1 W. H. Portwood, T.E.&L. Sur. Loc.; 6,000-ft. test.

Clay County

Barnett Pet. Co. No. 1 Ben Nutter, sec 30, Grayson Co. Sch. Lds. S.D. 4,087 ft.
Deep Oil Dev. Co. No. 1 C. H. McClellan. Chas. F. Stanley Sur. A-407. Drlg. 3,311 ft.
Wirt Franklin et al No. 1 Staggs, sec 34, A.G.S.L. Sur. 12½-in. at 130 ft.; drlg. 4,498 ft.
Walter Gant No. 1 Bryant Edwards, S. C. Beldon Sur. A-12, 6,000-ft. test. Drlg. 2,989 ft.
Healdton O. & G. Co. No. 1 Wallace, Belcher Subd. Drlg. 4,640 ft.
W. P. Luse No. 1 Hapgood, sec. 68, Marion Co. Sch. Ld. 5,000-ft. test; drlg. 1,275 ft.
Wood Pet. & Roy. Corp. No. 1 I. H. Kempner, Blk. 44, Bosque Co. Sch. Ld. Sur. A-10. Drlg. 1,425 ft.

It's no mystery

WHY THE

MILLER SAND PUMP

increases PRODUCTION

The sand and sediment that decreases production, the MILLER cleans out quicker, at less cost—that's why the MILLER Sand Pump is in World-Wide use today!

The MILLER is made in diameters of 2½, 3, 3½, 4, 4¼, 5, 5½, 7 and 9 inches and lengths of 20, 25 and 30 feet. 5/32-inch wall thickness in REGULAR Type, ¼-inch wall tubes HEAVY Type Sand Pumps.

INTERCHANGEABLE BOTTOMS
To Meet Every Condition

- **BAILER BOTTOM** — With the Bailer Bottom installed the MILLER is quickly changed to a Bailer giving you a combination of either Bailer or a Sand Pump in one tool.
- **SAND BOTTOM** — Used when tools are run and when well is shot to quickly remove loose material.
- **STAR BOTTOM** — Used for cutting the sand loose.
- **CHISEL BOTTOM** (In Pump) — With this bottom tightly packed sand can be easily broken in small pieces so it can be picked up in the pump.

Write for Descriptive Folder and Price List

See Page 1186 COMPOSITE CATALOG

PATENTED
NO. 1370340
NO. 1523606
NO. 1767390
NO. 1868210
NO. 1956018
NO. 2055647

MILLER Sand Pump Co.

General Offices and Shop, Box 4516
OKLAHOMA CITY, OKLA., U. S. A.

Branch Shops and Offices:
SAPULPA, OKLA. and KILGORE, TEX.

FOR SALE BY SUPPLY STORES EVERYWHERE

March

28-30—Detroit, Mich., Society of Automotive Engineers, National Passenger Car Meeting, Hotel Statler.

April

4-6—Cincinnati, Ohio, A.G.A. Distribution Conference, Netherland Plaza.

5-6—Milwaukee, Wis. National Association of Petroleum Retailers, mid-year directors meeting.

11-12—Chicago, Ill. Oil Burner Institute, annual meeting, Palmer House.

12—Kilgore, Tex., East Texas Chapter, A.P.I. Division of Production, High School Auditorium.

13-15—Cleveland, Ohio, National Petroleum Association.

13-15—Houston, Tex., Petroleum Industry Electrical Association.

14-15—Milwaukee, Wis. Society of Automotive Engineers, National Tractor meeting, Schroeder Hotel.

14-15—Pittsburgh, Pa., Eastern District A.P.I. Division of Production, William Penn Hotel.

15—Charleston, W. Va., annual convention, West Virginia Petroleum Association, Daniel Boone Hotel.

17-21—Dallas, Tex., American Chemical Society.

19—Los Angeles, Spring meeting, Pacific Coast district, A.P.I. Division of Production, Biltmore Hotel.

19-21—Norman, Okla., Gas Measurement Short Course.

20-22—Buffalo, N. Y., American Institute Mining and Metallurgical Engineers, Open Hearth Conference.

Oil Man's Calendar

25-27—Hot Springs, Ark., Western Petroleum Refiners Association, annual meeting.

May

5-6—Asbury Park, N. J. Fuel Oil Distributors Association of New Jersey, third annual convention, Hotel Berkeley Carteret.

9-12—New Orleans, La., Natural Gas Department, A.G.A.

11-13—Tulsa, Natural Gasoline Association, Hotel Tulsa.

12-14—Tulsa, National Oil Scouts Association of America.

14-21—Tulsa, International Petroleum Exposition.

23-25—Wichita, Kans., American Petroleum Institute, eighth midyear meeting.

27-28—State College, Pa., seventh annual conference, School of Mineral Industries, Pennsylvania Grade Crude Oil Association and Pennsylvania Natural Gas Men's Association.

June

4—Robinson, Ill., sixth annual Petroleum Conference of Illinois-Indiana.

6—Houston, Tex., Oil Workers International Union.

16-18—Pittsburgh, Pa., Pennsylvania Grade Crude Oil Association.

20-24—St. Louis, Mo., American Society of Mechanical Engineers.

12-17—White Sulphur Springs, W. Va. Society of Automotive Engineers, summer meeting, The Greenbrier.

15-18—Dallas, Tex. American Society of Mechanical Engineers, National Oil and Gas Power Meeting.

June-July

27-1—Atlantic City, N. J., annual meeting of American Society for Testing Materials.

August-September

31-3—Spokane, Wash., Pacific Coast meeting of American Institute of Electrical Engineers.

September

14-16—Santa Barbara, Calif., annual meeting Pacific Coast Gas Association, Biltmore Hotel.

October

——Tulsa, I.P.A.A., annual convention.

6-8—Knoxville, Tenn., fall meeting of industrial minerals division of American Institute of Mining and Metallurgical Engineers.

10-14—Chicago, National Safety Congress, Stevens Hotel.

Cooke County

Kell & Randall No. 1 Rogers, E. Barnes Sur. A-43. Cmtd. 43 ft. 10-in.

Mildred Oil Co. No. 1 C. B. Garrett, A. C. C. Bailey Sur. A-44. R.U.R.

H. L. Nutting et al No. 1 H. P. Ware, A.C.C. Bailey Sur. A-44. T.D. 2,230 ft.; P.B. to test S.S.O.&W. 2,216-19 ft.

Sinclair Prairie Oil Co. No. 1 J. M. Best, T. Toby Sur. A-1,054. R.U.R.

Sunset Oil Co. No. 1 J. T. Donald, S.P. R.R. Sur. A-971. 3,500 ft. test; drlg. 891 ft.

Denton County

W. C. Curry et al No. 1 G. F. Owens, N. Rudder Sur. A-1,060. Drlg. 1,705 ft.

Foard County

Texas Co. No. 16 Johnson, sec. 37, S.P. R.R. Sur. Drlg. 695 ft.

Jack County

Auers et al No. 1 Garrison, W.C.R.R. Sur. A-960. 7-in. 2,830 ft. by Schlumberger; T.D. 3,200 ft.; tstg. S.S.O. 2,837-50 ft.; S.D.O.; may D.D.

Butler & Horn No. 1 Henderson, S.P. R.R. Sur. A-565. 3,500-ft. test; drlg. 3,300 ft.

G. M. Gillespie No. 1 A. M. Street, sec. 3339, T.E.&L. Sur. U.R. 8¼-in. 2,215 ft.; drlg. 2,773 ft.

Van Eman & Richards No. 1 Whitsell, Wm. McElroy Sur. A-599. Fsg. 3,235 ft.

Knox County

O. P. Dorsey No. 1 A. S. Haskins, sec. 210, B.B.B.&C. Sur. Loc.

Montague County

H. H. Powell No. 1 Arch Durham, W. J. Wagoner Sur. A-936. Drlg. 600 ft.

J. W. Sorrell et al No. 1 J. E. Walthall, Sam. H. Smith Sur. A-662. S.D.O. 2,720 ft.

Wichita County

Bolin & Whittington No. 1 Waggoner Bros., sec. 21, H.&T.C. Sur. Sdy. L. 3,840-62 ft.; 6⅝-in. 3,851 ft.; flowed & swabbed 40 bbls. per hr. and S.D. storage.

C. W. Boller No. 1 S. Y. Collins, Charles Roberts Sur. A-540. Drk.

M. T. Flanagan No. 1 Texas L. & M. Co., J. McCool Sur. A-192. Drlg. 3,900 ft.

J. S. Graham No. 1 E. M. Goetze, sec. 2, W.C.R.R. Sur. A-444. 4,000-ft. test; spudded and S.D.

F. W. Merrick, Inc., No. 1 W. T. Waggoner, sec. 35, H.&T.C. Sur., Blk. 5. Top Ellenburger 3,745 ft.; S.L. 3,733-3,802 ft.; 6⅝-in. 3,740 ft.; S.L. 3,733-3,802 ft.; testing.

E. J. Stump No. 1 M. P. Bishop, L. Netherly Sur. A-240. S.D.O.; S.L. 3,885-3,907 ft.

West & Medders No. 1 Williams, sec. 25, H.&G.N. Sur. A-155. Drlg. 4,195 ft.

Wilbarger County

Loyd H. Brown No. 1 W. T. Waggoner, sec. 33, Blk. 6, H.&T.C. Sur. 4,230 ft. fsg. collapsed pipe.

N. Gilbert No. 1 McGill, sec. 3, Blk. 9, H.&T.C. Sur. Sand 3,762-3,791 ft.; trace oil; U.R. 6⅝-in. 3,750 ft.

Jack Kadane No. 1 W. T. Waggoner, sec. 20, H.&T.C. Sur., Blk. 5. Loc.

E. C. Lawson No. 1 Ruitsch, sec. 21, H. &T.C. Sur., Blk. 9. Drlg. 1,600 ft.

Phillips Pet. Co. No. 1 W. T. Waggoner "Barger," sec. 11, H.&T.C. Sur., Blk. 14. Drlg. 3,340 ft.

Young County

Ansac Oil Corp. No. 1 E. S. Graham, A. Hines Sur. A-135. T.D. 4,000 ft.; tstg. L. 3,990-99 ft.

Cosden Oil Co. No. 1 Price, Y.C.S.L. Sur. No. A-1,285. Loc.

N. B. Crenshaw No. 1 J. C. Dwight, sec. 1,444, T.E.&L. Sur. S.D. 400 ft.

Howard Pet. Co. No. 1 G. R. Stewart, sec. 84, C.S.L. Sur. Drlg. 4,440 ft.

Kadane-Griffith No. 1 Sanders, sec. 1989, T.E.&L. Sur. Drlg. 3,005 ft.

A. N. Munhall No. 1 Ed Johnson, A. McLennan Sur. A-185. Drlg. 7,250 ft.

RANGER (CENTRAL TEXAS) DISTRICT

Callahan County

Joe Gallagher No. 1 W. T. Harris, 200 ft. from S line, 1,050 ft. from E line sec. 347, G. W. Denton Sur. 2,000-ft. test, 5 mi. N Oplin.

J. H. Howell No. 1 E. I. Vestal, 1,149 ft. E line, 1,000 ft. N line, Jesse Dyson Sur., 2 mi. NE Cross Plains. rotary to 4,000 ft. Surf. to 100 ft.; drlg. 550 ft.

J. C. Jackson et al No. 1 Thompson, 2 mi. S. Euia, sec. 30, B.B.B.&C. Sur. S.D 1,955 ft.

Wittmer Oil & Gas Properties, Inc., No. 1 R. D. Williams et al, 300 ft. from N line, 467 ft. from W line sec. 2,269, T.E.&L. Sur., 2 mi. NE Putnam, 4,500-ft. test. Drlg. 1,000 ft.

Coleman County

J. F. Brock No. 1 J. H. Livingston, SE cor. SW¼ county, J. D. Waters Sur. No 208. S.D. 1,070 ft.

S. M. Devine et al No. 1 Masterson, 2 mi. W of Burkett, Asa Wickson Sur. Drlg. 1,076 ft.

Garrett Oil Co. No. 1 W. S. Smith et al., 4 mi. SE Coleman, J. Thiele Sur. 2,300-ft. test.

Comanche County

N. D. Gallagher et al No. 1 Mrs. B. L. Terry, Desdemona pool. N. H. Kuykendall Sur. S.O. in Ellenburger; drlg. 4,815 ft.

Dobbs Oil Co. No. 1 Hodges, sec. 11, Blk 2, H.&T.C. Sur.. T.D. 2,710 ft:; acid. 4,000 gal. 2,630-62 ft.; bldg. tanks.

Eastland County

G. D. Chastain et al No. 1 Weddington, 4 mi. N. Cisco, sec. 496, S.P.R.R. Sur. T.D. 4,079 ft.; plugging back.

Hayner, Reaves & Hose No. 1 P. L. Larkin, 3 mi. NW Rising Star, 912 ft. from W line, 546 ft. from S line, NW¼, sec. 40-2, E.T.R.R. Sur. Rig.

Hickok Prod. & Dev. Co. No. 1 J. E. Donovan, 5 mi. NW of Cisco, 660 ft. from N and E lines of NW¼ sec. 489, S.P. R.R. Sur. Top Ellenburger 4,247 ft.: trt. 1,000 gal. and 10,000 gal. acid; no results; drlg. past 4,310 ft.

Neil A. Moore No. 7 Holcomb Heirs, 970 ft. from W line and 600 ft. from N line, SW¼ 1-4, H.&T.C. Sur. Loc.

Fisher County

Forest Dev. Corp. & Daube No. 1 L. G. Bennett, 660 ft. from N & E lines, sec. 51-3, H.&T.C. Sur. Rotary to 4,500 ft.; 3 mi. SW of Rotan.

Owens-Snebold & A. C. Varner No. 1 J. H. Milsap, 3,500-ft. wildcat, 2 mi. NW McCaulley, 330 SL 330 WL, sec. 61-2, H.&T.C. Sur. Drlg. 927 ft.

Tom C. Patton, Inc. No. 1 John B. Stribling, 660 ft. from S and E lines, sec. 110-3, H.&T.C. Sur. Pits; 4,500-ft. test.

Haskell County

Fain-McGaha Oil Corp. No. 1 T. G. Hendrick, C W½ sec. 104, Indianola Ry. Sur. Set 150 ft. of 12½-in.; drlg. 1,514

J. W. and A. E. McMillan No. 1 A. E. Pardue, 440 ft. from N and W lines, S½ M. Collum Sur. No. 4 A-685. Rotary to 3,500 ft.

Jones County

J. S. Bridwell No. 1 C. L. Carter, 220 ft. from N and E lines SW SE section 37-15, T.&P. Sur. S.S.O. 1,890 ft.; drlg. 2,070 ft.

Jack Burleson No. 1 T. J. Lotspeich, 220 ft. from S and E lines of sec. 40-15, T.&P. Sur. Dry at 2,315 ft.; T.D.

Danciger No. 1 Hugh E. Roberts, 220 ft. from S and W lines, E 110-ac., NE¼, sec. 37-15, T.&P. Sur. Top sd. 1,922 ft.; T.D. 1,946 ft.; shot 40 qts.; comp. 272 B.O.P.D.

H. G. Daniels & Dale H. Dorn No. 1 F. T. Moore, 220 ft. from W line, 330 ft. from S line, Moore 115 ac. in John Winter Sur. 138. Drlg. 575 ft.

W. W. Fondren No. 1 Cox-Manley, 330 ft. from S line and 330 ft. W of C of S line of C. B. Sheppard Sur. 70. Drlg. 1,000 ft.

F. A. Gillespie & Sons No. 1 J. N. Hatfield, 3 mi. N Noodle Creek field, 330 from N and E lines, 80-ac. tr. in M. Northington Sur. No. 270. S.D.O. 2,649 ft.; T.D.

Mack Hayes and Montour Oil Co. No. 1 Chittenden. 7 mi. SE Hamlin. Subd. 18 McMullen & McGloin Sur. 337. Drlg. 3,000 ft.

Humble No. 1 I. N. Irwin, 330 ft. from S and W lines sec. 48-18, T.&P. Sur., 1½ mi. E Noodle Creek pool. Rotary to 3,200 ft. Spd.

Thos. D. Humphrey No. 2 N. D. Newton, 330 ft. from W line, 990 ft. from S line, Jas. Halfpenny Sur. 139. Drlg. 555 ft.

Iron Mountain No. 1 D. J. Herbst, 5 mi. E Hamlin, 330 ft. from N and E Sub 18, Austin Williams Sur. 339. Set 10-in 2,245 ft.; drlg. 2,565 ft.

F. M. Loop No. 1 W. T. Young, 330 ft. from N line, 253 ft. from E. L. Young 276-ac., D. Bustillos Sur. 189. Loc.

F. W. Martin No. 1 B. N. Herndon, 330 ft. from S and W of NW sec. 1, M.E.&P. Sur. U.R. 8-in. to 2,567 ft.; T.D.

F. W. Merrick et al No. 1 C. A. Cox, cent. Cox 119-ac. tr., J. H. Hughes Sur. No. 201. Drlg. 1,664 ft.

Owens-Snebold No. 1 Alice Rhodes, 4 mi. W of Nugent, 330 ft. from N and W lines of NW¼ sec. 31, T.&P. Sur., Blk. 15. Lost hole 950 ft.; skd. 20 ft. E; U.R. S.S.O. 1,980-90 ft.; R.B.S.O. 2,227-45 ft.; H.F.W. 3,235 ft.; ran 6-in.; S.D.O. 3,935 ft.; T.D.

B. H. Roth No. 1 D. A. Kinney, 4,000-ft. test, 330 ft. from S and E of NW sec. 7-4, H.&T.C. Sur. Running 8-in. to 2,140 ft.

Stanton & Miller No. 1 Gaither, 4½ mi. N of Anson, sec. 38, B.B.B.&C. Sur. S.D. 2,180 ft.

Joe A. Worsham et al No. 1 J. H. Commons, 330 ft. from E line, S½ E 80-ac., Subdiv. 8, A. W. Hill Sur. No. 4. Loc.

Nolan County

Hantho-Nelson, Inc., No. 1 J. H. Withers, C SW¼ sec. 65-21, T.&P. Sur. Wildcat to drill 4,000 ft. Spd.

Palo Pinto County

W. H. Clement No. 1 Federal Life Ins. Co., 2 mi. W Mineral Wells, sec. 51, T.&P. Sur., Blk. A (E of B). Drlg. 1,710 ft.

Bill Cole et al No. 1 J. W. Harris Est., NW cor. county, De La Garza Sur. S.D. 950 ft.

Shackelford County

Danciger No. 2 J. E. McCown, 330 ft. from S and E sec. 158, B.B.B.&C. Sur., N off set to Haterius. Top Palo Pinto 3,187 ft.; cg.

Joe DeGrazier No. 1 Harbough, E cen part of county, sec. 1,563, T.E.&L. Sur 4,500-ft. test; drlg. 1,300 ft.

Forest Dev. Corp. No. 1 T. G. Hendrick, NW cor. of county, 2,600 ft. from N line and 4,300 ft. from W line of sec. 1, A.B.&M. Sur. Est. 15,000,000 ft. gas per day 1,603-17 ft.; gas 1,662-65 ft., incr. est. 4,000,000 ft., 1,680-85 ft.; est. 1,000,000 ft. 1,804-06 ft. and 1,810-15 ft.; S.S. oil and wtr. 1,864 ft.; inc. wtr. 1,880-83 ft.; U.R. 8-in. to 2,340 ft.

R. C. Parker No. 1 J. Smalley, NW cor. of NE¼ county, 1,245 ft. from N line and 1,260 ft. from E line of sec. 11, E.T.R.R. Sur. Spd.

Ungren & Frazier No. 1 J. S. McKeever, 306 ft. from W line, 354 ft. from N line, NW¼ SW ¼ sec. 14-3, H.&T.C. Sur. 3,500-ft. test; drlg. 1,065 ft.

Stephens County

Danciger Oil Ref. Co. No. 1 Mrs. Aileen Copeland, 8 mi. SE Ivan, 1,196 ft. from E line and 350 ft. from S line of sec. 1, M.E.P.&P. Sur. Drlg. 3,542 ft.

Graham, Hafner, Lane & Inman No. 1 J. N. Yocum, 5 mi. SE of Frankell, 250 ft. from N and E lines of farm or approx. 2,525 ft. from E line and 1,400 ft. from S line of John R. Carter Sur. Trt. 1,000 gal acid 3,575-90 ft.; est. 25-50 bbls. per day; drlg. 3,434 ft.

I. C. Little No. 1 R. M. Rogers, NE¼ of county, 150 ft. from E line and 1,980 ft. from S line of sec. 28, T.&P. Sur., Blk. 5. Tstg. after 10,000-gal. acid 3,960-4,055 ft., T.D.; with 3,000,000 ft. gas.

Stonewall County

Bert Fields No. 1 R. P. Pierson, C of E 80-ac., E. A. & S. M. Lee Sur. Abst. 817. Loc.

General Crude Oil Co. No. 1 J. D. Smith, SW cor. county, 330 ft. from S and E lines of sec. 371, H.&T.C. Sur., Blk. 2 Set 13⅝-in. 2,119 ft.; drlg. past 2,600 ft.

F. B. Parriott No. 1 H. T. Carlile, 330 ft. from S line, 990 ft. from E line, SW¼ NE¼ sec. 293, Blk. D, H.&T.C. Sur.. rotary to 5,500 ft.. 6 mi. NW of Swenson. Set 8¼-in. at 3,345 ft.; standardizing.

Taylor County

E. P. Campbell et al No. 1 McGee & Manley, 330 ft. from N, 750 ft. from E lines, SW¼ sec. 22-16, T.&P. Sur. S.D. at 2,060 ft. for 6-in.

Bert Fields et al No. 1 Sears, sec. 223, Blk. 64, H.&T.C. Sur. Drlg. 2,695 ft.

Wichita Prod. Co. No. 1 J. H. Parramore, 592 ft. from E line, 400 ft. from S line, SW¼ sec. 81-14, T.&P. Sur. Loc.

Throckmorton County

Humble O. & R. Co. No. 1-A Reynolds Cattle Co., 330 ft. from S and E lines, sec. 7-2, A.B.&M. Sur. H.F.W. 2,525-30 ft.; drlg. 3,290 ft.; will drill to 4,500 ft.

Morris & Spoonts No. 1 Alden Bros., NW cor. county, 1,350 ft. from E line and 5,210 ft. from S line of Raymond Sanches Sur. A-248. Drlg. 810 ft.

Henry Zweifel No. 1 J. H. Lee, 4 mi. NE of Woodson, 930 ft. from E line and 2,011 ft. from S line of J. A. George Sur. T.D. 865 ft.; S.D.

Wise County

Latex Oil Co. No. 1 Smith, 3 mi. E of Bridgeport, Jas. Couch Sur. T.D. 4,075 ft.; P.B. to 3,910 ft.; S.D.; W.O.

STOCKS HELD IN PACIFIC COAST TERRITORY BY CALIFORNIA OIL COMPANIES

	Jan. 31, 1938	Dec. 31, 1937 (Reclassified)	January changes
1. Fuel oil residuum and non-gasoline-bearing crude	71,758,162	68,529,388	+3,228,774
2. Gas oil and diesel oil	8,865,191	8,648,990	+216,201
3. Gasoline-bearing crude	29,393,330	29,417,842	—24,512
4. Unblended natural gasoline	2,121,425	2,001,204	+120,221
5. Gasoline (not including distributing and service stations)	14,443,190	13,520,678	+922,512
6. Naphtha distillates	*1,333,075	*1,464,577	—131,502
7. All other stocks	†4,769,380	†4,457,568	+311,812
Total	132,683,753	128,040,247	+4,643,506
*Estimated amount of unfinished gasoline contained in item No. 6	1,160,639	1,248,291	
†Coke included in item No. 7	22,190	22,435	

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1938 High	1938 Low	Week ending Mar. 19 Sales	Week ending Mar. 19 High	Week ending Mar. 19 Low	Week ending Mar. 19 Close	Stocks—	Total shares outsanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
72½	57	1,400	67¾	64	64¼	Amerada Corp.	788,675	N.P.	50cQ	3-31-38	$2.00	114⅞	51½	125½	75
24	20	7,000	23¼	20⅝	21	Atlantic Refining	2,663,999	$25	25cQ	3-15-38	1.00	37	18	35⅛	26⅝
19	14⅛	5,700	17½	15	15¾	Barber Co.	387,149	$10	75c	12-16-37	1.00	43⅜	10⅛	38½	21
16⅜	12⅞	21,500	15	12⅞	13⅛	Barnsdall Oil Co.	2,250,344	$5	25cQ	2-1-38	1.00	35¼	10	28¼	14⅛
10½	8½	16,100	9¼	8½	8⅝	Consolidated Oil Corp.	13,919,417	N.P.	20cQ	5-14-38	.90	17⅞	7	17¼	11½
34⅜	26⅛	12,600	29⅛	26⅛	26¾	Continental Oil of Delaware	4,682,615	$5	25cQ	3-31-38	1.50	49	24	44⅞	28⅛
8⅞	6¼	15,700	8	6½	7	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	17⅝	4¾	13⅞	6⅜
22⅝	17	3,900	19	17	17⅛	Mid-Continent Petroleum	1,855,912	$10	$1	11-1-37	1.50	35⅜	14	30⅞	17¼
17¾	13⅝	700	14¼	13⅝	13⅝	Mission Corporation	1,399,345	N.P.	25c	12-24-37	1.25	34	15	29⅞	16¾
23	14¼	13,700	21½	18¼	19½	National Supply	382,591	$25	$2 pf.‡	12-22-37	(‡)	41⅜	17⅝	75½	19⅞
14⅞	11½	10,300	13	11½	12	Ohio Oil Co.	6,563,377	N.P.	50cSA	12-15-37	1.00	22⅞	9	18	12⅛
15⅞	11⅜	1,600	12	11⅜	11⅜	Pacific Western Oil	1,000,000	N.P.	75c	12-15-37	.75	29¾	11¾	23½	11¾
9	8	No sales	..	..	..	Pan American Pet. & Trans.	4,702,945	$5	$1 *	12-21-37	1.00	17⅛	7	20⅝	12¼
42½	34	14,600	37⅞	34	36	Phillips Petroleum	4,449,052	N.P.	50cQ	3-1-38	2.75	64	30⅛	52⅜	38⅛
20	16¼	2,700	19¼	17½	17½	Plymouth Oil Co.	1,050,000	$5	35cQ	9-30-37	1.65	29⅞	13	27¾	11⅞
13½	10¼	23,100	12	10½	11⅛	Pure Oil Co.	3,281,120	N.P.	25c	12-1-37	.25	24⅜	8¾	27⅞	16
7⅞	5⅜	6,700	6¼	5½	5⅝	Richfield Oil Corp.	3,986,638	N.P.	25c	12-24-37	.25	6½	4⅛	..	..
27½	20	2,700	24¼	21½	22	Seaboard Oil of Delaware	1,224,283	N.P.	25cQ	3-15-38	1.00	54⅛	16	44	30½
18¼	12	4,800	14⅛	12	13½	Shell Union Oil	13,070,625	N.P.	50c	12-20-37	1.00	34¾	14⅞	28¼	14¾
34¾	24	3,400	26½	24⅛	25½	Skelly Oil	1,006,348	$15	50c	12-15-37	1.50	60⅝	26½	47⅜	19½
16⅜	13	32,700	14½	13	13⅞	Socony-Vacuum	31,151,071	$15	25c	3-15-38	.80	23¼	13	17½	12½
33⅞	28⅝	12,200	31¼	29	29⅝	Standard Oil of California	13,014,754	N.P.	35cQ†	3-15-38	2.00	50	27⅛	47⅝	35
35½	28¾	15,900	31¼	28¾	29⅜	Standard Oil (Indiana)	15,196,241	$25	25cQ	3-15-38	2.30	50	26½	48½	32¾
35½	34	400	35	34½	35	Standard Oil of Kansas	112,837	$10	$5	12-20-37	5.00	43	30⅝	31	25
54⅛	44½	26,800	51½	45¼	47¼	Standard Oil of New Jersey	25,856,081	$25	$1.25SA†	12-15-37	2.50	76	42	70⅜	51⅛
57⅞	48½	300	50½	49	49	Sun Oil	2,316,486	N.P.	25cQ	3-15-38	$1 & 8% Stk.	77½	44½	91	70
3⅜	2¼	6,600	2⅝	2¼	2¼	Superior Oil Corp.	1,388,079	$1	....	....	....	7¾	1½	6¾	3
44⅞	37¼	30,200	42	37⅝	39½	Texas Corp.	10,896,858	$25	50cQ	4-1-38	2.25	65½	34¾	55¼	28⅞
4⅞	3⅜	4,400	4	3⅜	3⅝	Texas Gulf Producing Co.	888,134	N.P.	10c	12-23-37	.10	9⅝	2	8⅞	4⅜
10⅛	7⅝	7,500	8¾	8	8⅛	Texas Pacific Coal & Oil	888,237	$10	10c	3-1-38	.40	16⅝	5⅜	15¼	7½
15½	12⅛	8,800	14	12⅛	13⅝	Tide Water Associated	6,288,512	N.P.	25cQ	3-1-38	1.20	21⅝	13⅛	21¾	14¾
21⅝	18½	6,800	20½	19	19⅛	Union Oil of California	4,666,270	$25	30cQ	2-10-38	1.40	28¼	17½	28½	20¾
23½	21½	700	22	21½	21½	Union Tank Car Co.	1,200,000	N.P.	40cQ	3-1-38	1.60	31½	22	31⅝	22⅝
2¾	2¼	1,200	2⅝	2¼	2¼	Wilcox Oil & Gas	424,839	$5	....	5-10-28	....	6¼	1¾	5¼	2¾

*Payable in 3½% notes. †Includes extras. ‡One-tenth share $2 preferred stock.

New York Curb Exchange

1938 High	1938 Low	Week ending Mar. 19 Sales	Week ending Mar. 19 High	Week ending Mar. 19 Low	Week ending Mar. 19 Close	Stocks—	Total shares outsanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
9⅜	5½	6,100	6⅞	6⅛	6⅜	American Republics Corp.	1,308,049	$10	30c	12-27-37	$0.40	10	6⅝	..	..
10¼	7¾	1,100	8⅞	7¾	7⅞	Bridgeport Machine Co.	260,000	N.P.	1.25	12-30-37	$2.00	21⅜	7	21	13¼
39	35	100	37	37	37	Buckeye Pipe Line Co.	200,000	$50	75cQ	3-15-38	3.75	51½	36	50	39¾
110	100	150	110	107	107	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	3-21-38	7.00	123	95½	124¾	105
2	1½	17,400	1⅝	1½	1½	Cities Service	37,804,394	N.P.	....	6-1-32	....	5⅜	1½	7⅜	3
2⅜	1⅜	3,700	1⅜	1⅜	1⅜	Cosden Petroleum	399,687	$1	....	..	....	5½	1½	4½	1½
27½	22	4,100	24½	22	22⅛	Creole Petroleum	6,974,356	$5	50cSA†	12-15-37	1.00	38¾	20¼	39	19⅞
8¾	7	1,000	7¾	7½	7½	Darby Petroleum	351,390	$5	25cSA	1-15-38	.50	18⅝	6½	18⅛	9
3½	2½	1,100	2¾	2½	2½	Derby Oil & Refining	263,162	N.P.	....	.....	....	8⅜	2¼	6¾	1⅞
31	26	100	26	26	26	Eureka Pipe Line	50,000	$50	$1Q	2-1-38	4.00	47½	24½	47½	38½
42⅞	37	6,300	39⅞	37⅝	37¾	Gulf Oil Corp.	9,076,202	$25	25cQ	4-1-38	1.00	63½	33	59	36
70	60	3,500	68¼	65	65¼	Humble Oil & Refining	8,923,935	N.P.	37½c	4-1-38	2.00	87	54⅞	80	57
19½	17¼	2,200	18⅛	17¼	17⅞	Imperial Oil of Canada	26,919,871	N.P.	62½cSA†‡	12-1-37	1.25	24¼	14½	24½	19¾
8¼	6⅝	No sales	..	..	..	Indiana Pipe Line	300,000	$10	30c	5-14-38	.80	15	5⅞	9¾	5½
31¼	26¾	4,100	31⅛	26¾	28½	International Petroleum	14,247,088	N.P.	$1.25†‡	12-1-37	2.50	39½	23½	39⅝	32⅝
5	3¼	400	4⅝	4	4⅛	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	....	8¾	2⅜	5¾	2⅝
25⅛	18¾	7,400	22	19	20	Lion Oil Refining	270,000	N.P.	50cQ†	12-24-37	1.50	34	12½	17¾	7⅜
9¼	7⅛	1,900	8	7¼	7¼	Lone Star Gas	5,382,723	N.P.	20c	4-20-38	.60	14¼	5¼	14¼	9⅞
9⅜	7⅝	5,100	8⅜	7⅝	7⅝	Louisiana Land & Exp.	3,000,000	N.P.	20cQ†	12-15-37	.50	15¼	6⅜	15⅜	9⅞
8⅜	7	800	8⅜	7⅝	7⅞	Midwest Oil Co.	998,444	$10	50c	12-15-37	1.00	14⅝	6¼	..	..
5¼	4⅝	800	5⅛	5	5⅛	Mountain Producers	1,682,182	$10	30cSA	12-15-37	.60	7⅞	4⅛	8⅜	5
14⅝	13	2,400	14	13¼	13¼	National Fuel Gas	3,810,183	N.P.	25cQ	1-15-38	1.00	19½	12	23	17⅜
9¼	7¾	400	8¾	8⅜	8⅜	National Transit	509,000	$12.50	55cSA	12-15-37	1.00	12½	7¼	15¾	9¼
2⅝	1½	2,500	1¾	1½	1½	New Mexico and Arizona	1,000,000	$1	1c	12-1-36	....	5	1⅛	6⅝	1⅝
4½	4	100	4¼	4¼	4¼	New York Transit	100,000	$5	15c	4-15-38	1.00	5⅜	3⅞	6¼	4¼
6	5½	400	5¾	5½	5⅝	Northern Pipe Line	120,000	$10	25cSA	12-1-37	1.00	12¾	5¾	9¾	4⅞
7⅜	5⅜	34,800	6½	5½	6	Pantepec Oil	1,608,700	N.P.	....	.....	....	9⅝	2¾	10⅛	3¼
3½	2⅝	300	2⅝	2⅝	2⅝	Root Petroleum Co.	336,045	$1	25c	2-1-37	.25	13¾	2	19¼	4½
4	3	1,000	3	3	3	Ryan Consolidated	296,931	N.P.	....	.....	....	6½	2¼	4¾	1⅞
5⅜	3½	100	3½	3½	3½	Southern Pipe Line	100,000	$10	15cSA	3-1-38	.45	7¼	3⅞	7⅞	3¼
39	35½	700	36	35½	36¼	South Penn Oil	1,000,000	$25	50cQ†	3-31-38	3.65	56	35	44	32½
22	22	No sales	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	50cQ	4-1-38	2.00	42	20	60	44
18	16⅝	2,300	17¼	16⅝	16⅝	Standard Oil of Kentucky	2,604,790	$10	25c	3-15-38	1.50	21⅛	14¾	23⅜	17⅛
7½	6½	100	7⅛	7⅛	7⅛	Standard Oil of Nebraska	188,403	$25	25c	3-29-37	.25	13¾	8	14⅝	11
22	19	500	19⅞	19⅛	19⅛	Standard Oil of Ohio	753,740	$25	25c	3-15-38	1.50	45	16	40	21¾
3¼	2¾	4,200	2⅞	2¾	2¾	Sunray Oil	1,910,119	$1	10c	12-24-37	.25	4⅞	2	5	2⅝
4⅜	4	100	4⅛	4⅛	4⅛	Texon Oil & Land	336,028	$2	15cQ	3-31-38	.45	7⅝	2	9¾	5⅜
7⅝	5½	1,500	6	5⅝	5⅞	Transwestern Oil Co.	750,000	$10	....	.....	....	13⅞	4⅝	..	..
5¼	3½	12,300	4⅛	3½	3¾	United Gas Corp.	7,818,959	$1	10c	9-15-37	....	13⅝	3	10¾	4

†Includes extras. ‡Payable in Canadian funds. §Of which $1 was in preferred stock.

PERSONAL

E. DEGOLYER, Dallas, Tex., geologist, geophysicist, and director of the Louisiana Land and Exploration Company, and E. B. HOPKINS, of the American Maracaibo Company, Big Spring, Tex., have returned to their homes after visiting in New York on their way from Venezuela. SUMNER T. PIKE, of Case, Pomeroy & Company, New York, returned from Venezuela at the same time.

HENRY L. DOHERTY, president of the Cities Service Company, New York, has been elected a director of Temple University, Philadelphia, Pa. FRANK F. LAW, president of John Wyeth & Bros., Philadelphia, and DR. G. MORTON ILLMAN, associate professor of medicine at Temple's school of medicine, were chosen directors also. Mr. Doherty is a patient in the Temple University hospital.

SHAPLEIGH G. GRAY, for 11 years geologist with the Texas Company, has resigned to take a position with the Tide Water Associated Oil Company in Houston, Tex. Replacing him in the Shreveport office are B. E. BRENNER and HARRY DAY, who have been transferred from the company's East Texas offices.

RUSH GREENSLADE, ALLMAND M. BLOW, CLYDE H. PAPE, GEORGE PARKER, HARRY C. TYRRELL, JAMES H. GARDNER, HENRY N. GREIS, CHARLES B. PETERS, TOM B. SCOTT, JR., NELSON K. MOODY, and A. I. LEVORSEN are among oil men who loaned pieces for the exhibit of paintings, prints, carvings, etc., conducted by the Tulsa Art Association March 21 to April 3 in the association's gallery in Tulsa.

E. W. ISOM, of the Sinclair Refining Company, New York, has been appointed chairman of the 1938 automotive survey committee of the A.P.I. by N. E. LOOMIS, chairman of the central committee on refinery technology. R. P. ANDERSON, secretary of the Institute's division of refining, is secretary of the survey committee.

N. C. McGOWEN, president, headed a group of about 200 officials and department heads of the United Production Corporation and subsidiaries, Houston, Tex., who met in Shreveport, La., last week for their annual session. R. H. HARGROVE, vice president, acted as chairman. Other executives present were B. M. NOWERY, vice president and general superintendent of production, and M. A. ABERNATHY, vice president in charge of transportation. Discussions on various phases of company business were given by the officers and, in addition, C. L. HIGHTOWER talked on safety; S. L. DAVIS, accounting; J. G. HICKS, pipe lines; V. E. RASCH and ED PARKS, personnel.

A. G. REED, Fort Worth, Tex., vice president of the Cosden Petroleum Corporation in charge of production, has resigned to enter private business.

C. WOESSNER, petroleum engineer for the Gulf Oil Corporation, New York production division, will leave early in April for an extended stay in Venezuela.

J. S. LEACH, sales manager in southern territory for the Texas Company, Houston, Tex., accompanied by MRS. LEACH and a party of friends, is on a motor trip through the south with Miami, Fla., as his destination.

W. D. KUNZE, formerly attached to the Standard of Venezuela's production department and more recently stationed in West Tulsa, has departed for Colombia, South America, where he will join the field staff of the Colombia Petroleum Company.

JOHN R. SUMAN, vice president of Humble Oil & Refining Company, and WALLACE WILSON, president of the Wilson Supply Company, Houston, Tex., with their wives, are visiting in Charleston, S. C., where they went after attending the convention of the American Association of Petroleum Geologists in New Orleans, La.

C. M. BOGGS, president of the Kanotex Refining Company, Arkansas City, Kans., has been named chairman of the refining committee for the tenth International Petroleum Exposition, to be held in Tulsa next May. Mr. Boggs is president of the Western Petroleum Refiners Association. His committee is making plans for refining men attending the oil show to visit major refineries of the Mid-Continent district and to join in other tours of interest.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

Exports of petroleum and its products in February totaled 126,557,479 gallons, valued at $9,475,258. Crude exports were 8,371,952 gallons or 199,332 barrels. Illuminating oil was the largest item, 69,168,708 gallons.

B. B. Jones sells the last of his holdings in the Cushing field to the Prairie Oil & Gas Company for $275,000. He is now out of the oil business and a multimillionaire.

After the Pearson oil syndicate's recent big gusher in Mexico came in Everett DeGolyer, young geologist and a graduate of the University of Oklahoma, who "located," and supervised the drilling of the well, was promptly rewarded by a raise in his salary to $12,000 per year.

20 YEARS AGO

Sinclair Oil & Gas Company leads in raising the price of Oklahoma and Kansas crude to $2.25 per barrel, a 25-cent increase. Magnolia Petroleum Company raises Healdton crude to $1.45, a 25-cent advance.

Three wells in the Towanda, Butler County, Kansas, field combine to produce 35,000 barrels the first 24 hours.

On a capital of $30,000,000, Standard Oil Company of Indiana in 1917 earned $43,808,931 after depreciation, but before deducting taxes. After paying about $17,000,000 in taxes the company earned a net of a little over $89 per share. Stockholders voted to increase the capital to $100,000,000.

10 YEARS AGO

The Hendrick pool in Winkler County, Texas, hits a new production peak: 202,000 barrels per day from 110 wells, an average of 1,836 barrels per well. Seminole field in Oklahoma has declined to 286,992 barrels.

North Louisiana's record deep test in De Soto Parish has been junked at 6,149 feet. It had no showings.

Jacob Sheasley, 93, an oil producer since the early sixties, dies in Franklin, Pa. He opened the Franklin heavy-oil pool which produced what has been termed the best lubricating oil in the world.

BENSON E. TAYLOR, vice president of the Peerless Oil & Gas Company, San Antonio, Tex., is spending a few weeks in Tulsa in the course of a trip which has included a stay in Florida and visits to the company's properties in Texas.

GEORGE ECHOLS, GLENN H. McCARTHY, WILLIAM McCARTHY, JOHN BLAFFER, and SAM DUNLAP, Houston, Tex., independent oil men, spent the week-end in Monterrey, Mexico, on a pleasure excursion. They made the trip in Mr. Dunlap's airplane.

J. PAUL GETTY, head of the Getty Corporation and principal stockholder in the Mission Corporation, which owns a majority of the common stock of Skelly Oil Company, Tide Water Associated Oil Company and several other concerns, spent three days in Tulsa last week.

P. W. RIGGINS, division manager of sales for the Continental Oil Company, Fort Worth, Tex.; GEORGE BIGGS, sales promotion manager, Ponca City, Okla.; BARNEY HOLLAND, wholesale representative, Fort Worth; FRANK BETTIS, district manager, and H. L. ALLEN, wholesale distributor, Houston, Tex., were among the company's officials attending a dealers' conference in Houston the past week.

KARL F. HASSELMANN, president of the Salt Dome Oil Corporation, Houston, Tex., and K. M. REGAN, executive vice president, used a speedboat to make the trip to the geologists' and geophysicists' convention in New Orleans, La., last week. They started from Morgan's Point, on the Gulf of Mexico, and on their way to the convention city stopped to inspect wells on the Texas and Louisiana Gulf Coast.

PARAGRAPHS

W. E. WALZ, retired oil man, of Oil City, Pa., and MRS. WALZ, went to California after the recent flood to ascertain the damage done to their winter home near Los Angeles, and while they were there their $50,000 residence in Oil City was struck by lightning and destroyed by fire.

J. A. McDONALD, for 18 years head of the scouting department of the Shell Oil Company, San Francisco, and dean of the California scouts, has resigned to devote his entire attention to his position as secretary and treasurer of Malibu Sport Fishing, Ltd., a concern operating pleasure fishing craft from Malibu pier. Mr. McDonald graduated from the University of California as a mining engineer, entered the service of Shell soon after his discharge from the army, becoming the first man in the state whose full-time duty it was to gather and file complete records of all wells. WILLIAM N. HARROD, formerly a civil engineer, who became the second scout, now assumes the head office post.

JOHN W. NEWTON, of Beaumont, Tex., has been elected vice president and manager of refineries of the Magnolia Petroleum Company and vice president of the Magnolia Pipe Line Company. Mr. Newton also was elected a director of each company to succeed E. E. Swope, who died last December. He has been with the Magnolia 25 years.

WILLIAM WOODS PORTER, consultant geological engineer, will be instructor in a new course in practical oil geology offered by the University of California extension division, beginning April 12. The class will meet weekly at the division's headquarters in Los Angeles. The course is to feature geological factors affecting the origin of oil and rocks, the formation of oil fields, the exploitation of oil reserves and their value.

ROBERT J. DAY, formerly with the General Chemical Company, Union Carbide Company and Mellon Institute, is now a member of the research staff of the School of Mineral Industries, Pennsylvania State College, specializing in air-gas repressuring.

F. P. O'BRIEN and D. W. HEARN, of Beaumont, Tex., and C. C. BERLIN of Nederland, Tex., last week asked the Texas Supreme Court to grant approval of a corporation charter for an independent refinery workers' union which they propose organizing. The petition is based on the assertion that the new union does not violate any section of the National Labor Relations Act, as claimed by the Oil Workers Union, which protested against the granting of a charter to the new group.

KENNETH R. PARSONS, of Chicago, and GORDON L. POSTLE, of Butte, Mont., have sailed to join the geological staff of the Inland Exploration Company at Kabul, Afghanistan.

H. J. KEMLER has been transferred to Midland, Tex., to become division manager of the Shell Petroleum Corporation's exploration activities in West Texas and New Mexico. Mr. Kemler formerly was manager of Shell's Kansas division.

ROBERT F. HAND, assistant general manager of the Standard Oil Company of New Jersey marine department, is on a South American cruise which will make port calls at Cartagena, Colombia, and the other important Caribbean terminals.

C. W. HAMILTON, assistant to the vice president of the New York production division, Gulf Oil Corporation, returned this week from a business trip to Venezuela, where a subsidiary, the Mene Grande Oil Company, is one of the large producers.

ALFRED MARSTEN was elected president of the Mohawk Petroleum Company, San Francisco, Calif., at its recent reorganization. LOUIS MARSTEN and FRANK R. LONG were named vice presidents. CARL STEVENSON, in charge of sales, was made a director and secretary of the company.

E. C. WILL, general superintendent of the Shamrock Oil & Gas Corporation, Amarillo, Tex., was toastmaster at the company's third annual banquet held Thursday, March 17. Since the shamrock is the company's symbol, these yearly social affairs are held on St. Patrick's Day. The decorations were in green. More than 180 employes and their guests attended the supper dance.

Advancement for Hayes

E. P. Hayes, recently advanced to chief petroleum engineer for the Texas Company in its South Texas division, takes the place of W. V. Vietti, who was transferred to Colombia, South America. He had been petroleum engineer in the same division since 1933. He went to the Texas Company from the Bureau of Mines, with which he had been associated since 1925, first in the helium division, next in the potash division, and then in the petroleum and gas division, with headquarters at the bureau's experiment station in Bartlesville, Okla.

E. P. HAYES

Mr. Hayes was born in Ohio, but the family moved to Michigan when he was a child and he received his schooling in that state. In 1915 he graduated from the Case School of Applied Science in Cleveland, Ohio, with a degree in mechanical engineering. He entered the oil industry immediately by joining the Doherty Junior Engineering School, operated by the Empire Companies. Here he got a workout in New York oil fields and others in the East, after which he was sent to the headquarters office in Bartlesville.

When the United States entered the war the young man enlisted in the navy, and he served overseas in the aviation branch. Upon his discharge after the war Mr. Hayes held various positions, not all in the oil industry, until he joined the Bureau of Mines. He is first vice chairman of the Gulf Coast chapter of the American Petroleum Institute.

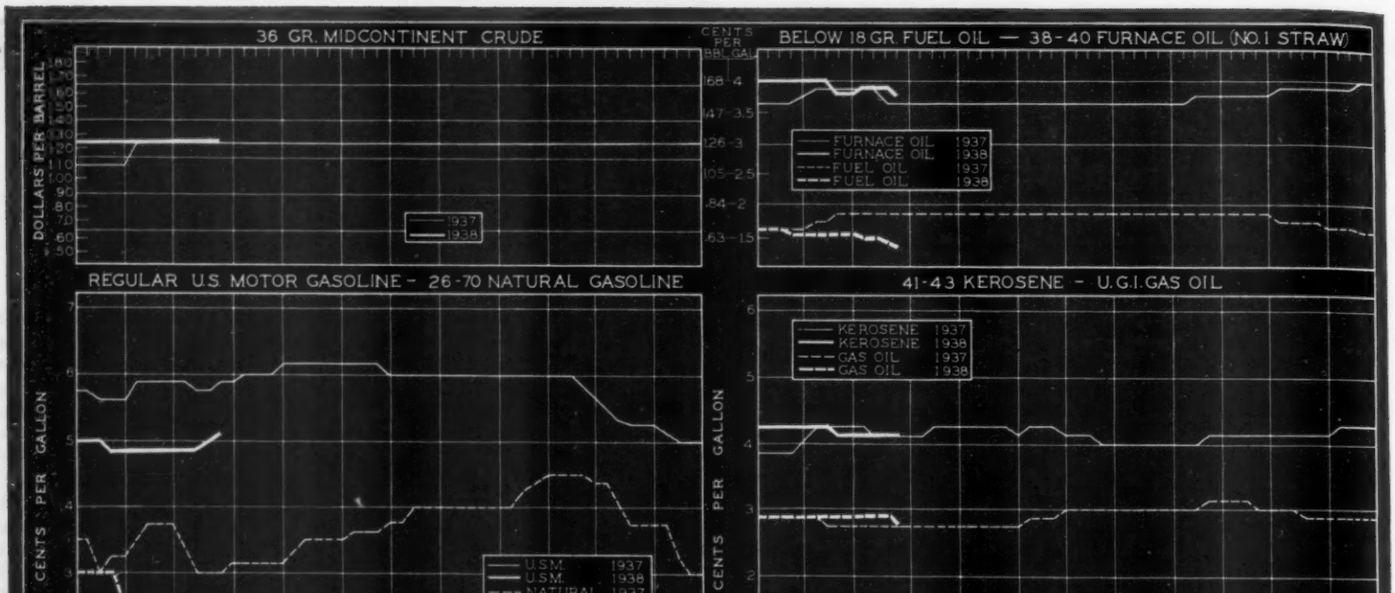
EDMUND JUSSEN, JR., manager of field operations for the Union Oil Company of California, with offices in Los Angeles, has resigned to enter private consulting practice in geological and valuation and appraisal work.

HARRY C. HANSZEN, independent oil operator of Houston, Tex., has been appointed a member of the national advisory board of Community Chests and Councils. He has been active in local community fund activities for several years.

C. H. WRIGHT, president of the Sunray Oil Company, Tulsa, headed a group of officials on a tour of inspection through the Gulf Coast and Southwest Texas fields the past week. Included in the group were WILLIAM G. JOHNSTON, director; H. S. McCLINTOCK, head of the land department, and F. L. MARTIN, head of the refinery department.

FOSTER NELSON, of Manitowoc, Wis., was reelected president of the Manitowoc County Oil Men's Association at the annual meeting held last week in Manitowoc. Other officers named were A. H. VANDERSTEIN, vice president; J. E. SPINDLER, secretary; JOSEPH SCHISEL, treasurer. Additional directors are WILLIAM MERTENS, PAUL DIRKMAN and GEORGE PLOEDERL.

O. W. KILLAM, of Laredo, Tex., pioneer oil operator in Southwest Texas, will be honor guest at the first South Texas Oil Men's Jubilee to be held in San Antonio April 8. Mr. Killam opened the Mirando Valley field, the first production in Southwest Texas, 17 years ago. Since then he has opened several other fields in that area. AL BUCHANAN, San Antonio operator and drilling contractor, is directing arrangements for the jubilee.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Motor Fuel in Group 3 Market Shakes Off Timidity and Goes to New High

By T. F. SMILEY

Gasoline, which crept up a cautious eighth-cent on some grades in the Group 3 market early last week, shook off its timidity later and confidently rose to higher ground along the whole front. Furnace distillates were spiritless. Natural gasoline was standing still. Plant shutdowns were expected to bolster the lubricants. Feeling among refiners generally was more hopeful, although habitual conservatives declared conditions had not changed fundamentally and they refused to shift their gaze from certain unfavorable aspects which have exercised a discouraging influence for months.

The fact that higher freight tariffs are to go into effect March 28 was a potent factor in lifting motor fuel prices, for buyers are stocking up before increased transportation rates add roughly 10 per cent to the cost of petroleum products. This eagerness to fill storage at a saving, though imparting zest to the market for the moment, inevitably will be followed by a lull, continuing till the built-up inventories begin to run low.

Cheerful Expectation Rules

Opinions differ as to whether the better prices being established now will hold during the rest period attending the first month or so under the new freight schedules. Preponderance of sentiment is on the side of cheerful expectation. It is pointed out that independent refiners are well sold up and that though spot buying will decline for a while after March 28 it will not dry up, for jobbers with limited storage facilities will be back in the market soon. Also the freight increase comes at a time when motoring conditions will be helping gasoline demand.

Refined Oil Market Barometer

Desirability of stocking up before higher freight rates become effective is causing lively buying and helping to lift gasoline prices. Many lubricant plants are closing because of disappointing market. Tractor fuel sales are heavy, but the volume is not sufficient to compensate for seasonal drop in heating oils, and refiners say they still operate at a loss.

MID-CONTINENT. Gasoline and tractor fuels strong. Fuels and lubricants soft.

EAST COAST. Prices generally weaker. Heavy fuels especially soft. Diesel oil off.

GULF COAST. Gasoline, kerosene, and fuel oil weak. General market sluggish.

CALIFORNIA. Fuel oil, gas oil, and diesel oil lower. Gasoline soft.

PENNSYLVANIA. Gasoline steadier and prices up. Kerosene weaker.

CHICAGO. Gasoline improving. Kerosene and tractor fuels firmer. Heating oils slack.

Attention is directed furthermore to the fact that even with the higher gasoline quotations now ruling, refinery operations still represent a loss, for declining revenues from heating oils and heavy industrials go far to neutralize the benefits of rising returns from gasoline. Thus there is no incentive to reopen plants shut down or to increase runs to stills, and so increase likelihood of distress stocks.

Observers who predict a recession in prices say that although the country's record-breaking stocks of gasoline are in the tanks of major companies, the very fact these majors have the gasoline, along with implications of the Madison trial, is likely to prevent them from extending a helping hand to small refiners who a little later may find themselves with surplus material seeking an outlet. Mounting gasoline stocks remain a threat so long as they exist, declare these analysts, who confess lack of faith in the market anyway.

Many Lube Plants Down

Disappointing action of the lubricant market has resulted in a series of shutdowns. It was estimated this week that close to 75 per cent of the bright stock and neutral plants in the Mid-Continent area were closed. One of the more important shutdowns in the last few days is that of the Mid-Continent Petroleum Corp. The wholesale cessation of operations was described by one informed observer as "the most constructive thing the refiners have done," and he added, "When there is no longer a profit in a certain product, what's the sense in making it?" He looked for a steadying of prices.

Current demand and supply of natural gasoline were about in balance, and prices, unchanged from last week, were steady. No unwieldy stocks were accumulating apparently. The naturals are now in their season of low demand, and no upturn is looked for till late June or early July when blending for fall motor fuel will begin.

The heating oils were increasingly soft, with prices off. Tractor fuels were firmer, but business from this group cannot be expected to make up for waning sales of furnace oils. Heavy industrial oil was extremely dull. Wax was lifeless.

East Coast Price Trend Softer, Heavy Fuel Oil Loses Most

By H. STANLEY NORMAN

NEW YORK, Mar. 22. — Petroleum product prices generally tended to soften last week although some held to their previous levels with market concessions restricted to occasional sales. Heavy fuel oil suffered most in the softening but cuts of 15 cents per barrel in diesel oil instituted in New York harbor the preceding week were extended to other territories and practically all important points of bulk delivery along the Atlantic Coast are on the lower basis.

Rumania was reported reentering the export gasoline market with a cargo loaded last week at slightly below 4¾ cents per gallon, Gulf Coast basis, for 64-66 375 e.p. material. Most Gulf Coast suppliers are still quoting a minimum of 4⅞ cents, but have failed to participate in current business beyond an occasional cargo. Rumania's recent reentry of the export market reported last week marks the first activity from that source of competition for several months.

Inquiries from foreign customers are frequent but there is still a reluctance to buy on the basis of current quotations which refiners in this country are attempting to maintain. Belief exists that exporters are still holding off their orders as long as possible to take advantage of any further weakening which may develop before the consuming season in this country gets under way around April 1.

Meanwhile, the depressed tanker charter market continues. Tankers were reported chartered last week for movement of light fuel oil in April from the Gulf Coast to north of Cape Hatteras at 18 cents per barrel and one boat was engaged for a cargo of crude over the same route at 17 cents per barrel in April. Inquiry for boats is growing slightly more active as the need for motor fuel approaches and tanker market observers feel that rates may stiffen within three or four weeks. There is not an excessive amount of idle tonnage available, but sufficient to keep an otherwise sound market upset. Boats under long-term contract are busy as are company-owned fleets. Heavy fuel oil was reported available in tank-cars and barges in New York harbor at 3⅛ to 3⅜ cents per gallon. The Bunker C market of $1.15 per barrel was reported on none too firm ground in some directions while other quarters said movement was satisfactory for this season of the year and that further cuts were not in immediate prospect. European developments have tended to restrict general exports and hundreds of passengers have delayed their voyages for an indefinite period cutting into the Bunker C fuel oil consumption by shipping companies. Requirements by railroads are still at the reduced level first appearing last October and November.

Diesel oil reductions of 15 cents per barrel first instituted in New York in the early part of March have been extended to include Boston, Providence, Philadelphia, Charleston, Baton Rouge and New Orleans by practically all sellers. The reductions were fairly well in line with reduced boat rates applying to cargo movement from the Gulf Coast to the points of delivery. Foreign inquiries reaching the American market last week came primarily from France. Three buyers were reported seeking supplies ranging from half to full cargoes of 64-66 375 e.p. gasoline. The lowest quotations on the Gulf Coast last week were 4⅞ cents per gallon, but in view of the Rumanian sale at a shade below 4¾ cents, Gulf Coast basis, a further concession may be expected in this country if business continues to settle in the hands of other suppliers. Some Gulf Coast refiners were quoting up to 5 or 5⅛ cents per gallon for minimum 64-octane motor fuel, but said they were not seriously interested in bidding for the business.

Coastwise movement of gasoline was reported picking up considerably as buyers prepare for the summer bulge in demand now only two or three weeks distant. Favorable motoring weather prevailed at the turn of the week in the northeastern section and brought out the greatest volume of automobile travel experienced since the early part of the winter.

East Texas crude oil remains on weak ground. Reports were current in New York last week that prompt loading business can be consummated at 12 cents per barrel over the posted field price of $1.35 which is a concession of approximately 5½ cents per barrel below normal gathering, main line and over-the-dock charges. Several observers feel that East Texas crude postings are still in danger of adjustment to a parity with quotations to exporters. There have been practically no spot cargo sales of crude oil for two or three months, although volume moved abroad is probably greater than for the same period in 1937 due to contracts negotiated in the last half of 1937 and in the early part of this year.

Retail gasoline conditions in this general area are mixed. In New York City the quotations are on reasonably stable ground at 18 to 19 cents per gallon for regular motor fuel. The district surrounding Buffalo presented the only fresh change in retail market conditions. Distributors dropped their tank - wagon prices as much as a cent per gallon and in most instances the cut was equaled at service station outlets, dropping the pump postings on regular motor fuel to 17½ and 18 cents per gallon, including taxes.

Northern New Jersey marketing conditions were also upset with unbranded or privately branded motor fuel selling for as little as 14 cents per gallon, including taxes. Other parts of New Jersey, however, were on a more normal basis and the trouble centering around Newark has prevailed for several months to greater or lesser intensity. Because of its position with reference to water and physical facilities available on the New Jersey side of the harbor and Hudson River it is the natural dumping ground for distress gasoline originating on the Gulf Coast or at inland refinery districts in the Southwest.

No material change was registered in the light fuel oil market last week. Kerosene is available in New York harbor for tankcar or

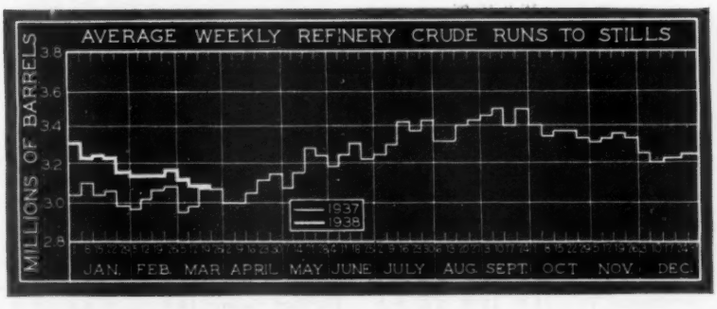
(Continued on Page 112)

A. P. I. Weekly Refinery Statistics

Week Ending March 19, 1938

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0	503,000	22,534,000	9,015,000
Appalachian	88.4	88,000	3,649,000	1,252,000
Indiana, Illinois, and Kentucky	92.4	375,000	15,715,000	6,823,000
Oklahoma, Kansas, and Missouri	84.7	245,000	8,196,000	3,426,000
Inland Texas	56.6	140,000	2,686,000	1,608,000
Texas Gulf	95.7	698,000	13,941,000	8,867,000
Louisiana Gulf	96.6	149,000	2,334,000	2,972,000
North Louisiana and Arkansas	63.7	39,000	556,000	519,000
Rocky Mountains	69.7	45,000	2,345,000	781,000
California	90.9	520,000	16,276,000	84,304,000
Total reported	89.0	2,802,000	88,232,000	119,567,000
Estimated unreported	.....	278,000	4,960,000	2,500,000
*Estimated total	.....	3,080,000	93,192,000	122,067,000
*Estimated total, previous week	.....	3,100,000	93,084,000	122,818,000
*March 20, 1937	.....	3,095,000	81,623,000	97,287,000

*Bureau of Mines, currently estimated.



Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATES)

Week ending March 5, 1938	304,527,000 barrels
Week ending February 26, 1938	305,167,000 barrels
Week ending March 6, 1937	291,428,000 barrels

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of March 22, 1938

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas a third grade and a premium grade are also available.

Standard Oil Co. (Indiana)

	Gasoline			Kero.
	Tank wag.	Dlr.	Inc. tax	tank-wag.
Chicago, Ill.	15.3	13.3	4.0	10.2
Decatur	15.3	13.8	4.0	10.2
Joliet	15.3	13.8	4.0	10.2
Peoria	15.3	13.8	4.0	10.2
Quincy	15.1	13.6	4.0	10.0
Davenport, Ia.	15.3	13.8	4.0	‡10.2
Des Moines	15.1	13.6	4.0	‡10.0
Mason City	15.4	13.9	4.0	‡10.3
Sioux City	15.3	13.8	4.0	‡10.2
Duluth, Minn.	17.0	15.5	5.0	10.9
Mankato	16.7	15.2	5.0	10.6
Minneapolis	16.7	15.2	5.0	10.6
Lacrosse, Wis.	16.7	15.2	5.0	10.6
Green Bay	17.0	15.5	5.0	9.9
Milwaukee	16.5	15.0	5.0	10.4
Detroit, Mich.	15.1	13.6	4.0	9.8
Grand Rapids	16.3	13.1	4.0	11.0
Saginaw	16.1	14.6	4.0	9.1
Evansville, Ind.	16.8	15.3	5.0	‡10.7
Indianapolis	16.9	15.4	5.0	‡10.8
South Bend	17.2	15.7	5.0	9.0
Fargo, N. Dak.	16.7	15.2	4.0	11.6
Minot	17.9	16.4	4.0	12.8
Huron, S. Dak.	17.1	15.6	5.0	11.0
Kans. City, Mo.*	14.6	13.1	4.0	9.5
St. Louis*	14.9	13.4	4.0	9.8
St. Joseph	14.6	13.1	4.0	9.5
Wichita, Kans.*	14.1	12.4	4.0	7.0

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective Dec. 7, 1936, f.o.b. Chicago tank-wagon prices: Range oil, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.3 cents. Stanolex No. 1, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7 cents. Stanolex furnace oil, 1-149 gallons, 7.8 cents; 150 gallons and over 7 cents; Stanolex A, 1-399 gallons, 5.75 cents; 400 gallons and over, 4.75 cents. Stanolex B, 1-799 gallons, 5.75 cents; 800 gallons and over, 4.75 cents.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline			Kero.
	Tank-wag. dlr.	Tank-car con'r.	Inc. tax	tank-wag.
Atl'tic, City, N. J.	12 75	11.25	4 0	8 5
Newark	12 75	11.25	4 0	8 5
Annapolis, Md.	14 85	13 35	5 0	9 5
Baltimore	14.25	12.75	5 0	9 0
Cumberland	16 65	14.15	5 0	10.0
Wash'g'n, D. C.	12 5	11.0	3 0	9 5
Danville, Va.	16.95	14.45	6.0	12.9
Norfolk	15.75	13.25	6.0	11.5
Petersburg	16.05	13.55	6.0	11.7
Richmond	16.05	13.55	6.0	11.7
Roanoke	17.25	14.75	6.0	12.9
Charles'n, W. V.	17.05	14 55	6 0	12 6
Parkersburg	15 35	13 85	6 0	11 2
Wheeling	16 25	14 85	6 0	12 2
Charlotte, N. C.	18 65	16 15	7 0	12 6
Hickory	19 15	16 65	7 0	13 0
Mt. Airy	18 95	16 45	7 0	12 8
Raleigh	18 25	15 75	7 0	12 1
Salisbury	18 75	16 25	7 0	12 7
Charleston, S. C.	17 25	14 75	7 0	11 1
Columbia	18 25	15 75	7 0	12 1
Spartanburg	18 95	16 45	7.0	12.9

Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tankcar price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective May 15, 1937, in North and South Carolina, West Virginia and Virginia (except Arlington and Fairfax counties): Commercial consumers taking deliveries of 50 gallons (W. Va., 100 gallons) or more at one time will be billed at posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons (W. Va., 100 gallons) will be billed at 4 cents per gallon over posted consumer tank-wagon price. Generally the posted consumer tank-wagon price will be the equivalent to the dealer price less .5 cent per gallon.

Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline			Kero.
	Tank-wag.	Net dlr.	Inc. tax	tank-wag.
Atlanta, Ga.	21 0	18 0	7 0*	†14 0
Augusta	21 0	18 0	7 0	*14 0
Macon	21 0	18 0	7 0	*14 0
Savannah	19 5	16 5	7 0	*12 0
Birm'ham, Ala.	21 0	18 0	8 0	12.0
Mobile	19.0	16.0	9.0	†11.0
Montgomery	22 0	19 0	9 0	†13 0
Jackson, Miss.	19.5	16.5	7 0	*13.0
Vicksburg	19.5	16.5	7 0	*13.0
Jacks'ville, Fla.	22 5	17 5	8 0	†11 0
Miami	20 5	17 5	8 0	†12 5
Pensacola	22 0	19 0	9 0	12 0
Tampa	20 5	17 5	8 0	10 5
Lexington, Ky.	19.0	16 0	6.0	11.0
Covington	18 5	15 5	6 0	11 0
Louisville	19 0	16 0	6 0	10 5
Paducah	19 5	16 5	6 0	10 0

Price basis to tank-wagon consumers: Effective January 4, 1937, 3 cents per gallon below tank-wagon price. Kerosene prices in all states subject to 2 cents discount except in Kentucky where prices are net.

*Includes 1-cent state tax. †Subject to 2-cent discount.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola has a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline		Kero.
	Dealer	Inc. tax	tank-wag.
Denver, Colo.	14.0	5.0	11.5
Grand Junction	19 0	5 0	15 0
Pueblo	13.0	5.0	10.5
Casper, Wyo.	17.0	5 0	11.5
Cheyenne	16 0	5 0	13 0
Butte, Mont.	19 5	6 0	15.5
Billings	19 5	6 0	15.5
Helena	19 5	6 0	15 5
Great Falls	19 5	6 0	15 5
Salt Lake City, Utah	19 5	5 0	16 0
Twin Falls, Ida.	21 0	6 0	18 0
Boise	21 5	6 0	18 0
Albuquerque, N. M.	17.5	*6.5	12.0

*Includes city tax of one-half cent.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline			Kero.
	Tank-wag. con'r.	Di-vided dlr.	Inc. tax	tank-wag.
Ohio points	16.0	15.00	5.0	*13.0

*Includes state tax of 1 cent.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline			Kero.
	Tank-wag. dlr.	Tank-car con'r.	Inc. tax	tank-wag.
Albany, N. Y.	14.5	12.5	5.0	9 0
*Met. N. Y.:				
M'nh't'n, Br'nx	14 5	12 5	5 0	8 75
Staten Island	14 5	12.5	5 0	8.75
Q'ns. & Brklyn	14 5	12 5	5 0	8.75
Buffalo	14.5	13.54	5.0	7.5
Rochester	15.0	13 17	5 0	8.5
Syracuse	14.5	13 12	5.0	9.0
Boston, Mass.	13.0	11.5	4.0	8.5
Portland, Me.	14 5	12 7	5 0	8 75
Manch'ter, N.H.	15.0	13 0	5 0	9 0
Burlington, Vt.	14.9	12 9	5.0	9 5

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes.

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer. Effective Nov. 15, 1936, monthly purchases of 25,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon; monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point; monthly purchases under 5,000 gallons, pay divided dealer tank-wagon prices at delivery point.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline			Kero.
	Tank-wag.	Serv. sta.	Inc. tax	tank-wag.
San Francisco	17 5	18 5	4 0	11.5
Los Angeles	17 0	18 0	4 0	10 0
Fresno, Calif.	18 5	19 5	4 0	12.5
Phoenix, Ariz.	21 0	22 0	6 0	*17.0
Reno, Nev.	20 0	21 0	5 0	13.0
Portland, Ore.	20 0	21 0	6 0	13 5
Seattle, Wash.	20 0	21 0	6 0	13 5
Spokane	22 5	23 5	6 0	16 0
Tacoma	20 0	21.0	6 0	13.5

*Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: on tank-wagon price: on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline			Kero.
	Tank wag.	Dlr.	Inc. tax	tank-wag.
Omaha	17 7	16 2	6 0	10 5
McCook	17.5	15.0	6.0	10.0
Norfolk	18.1	16.6	6.0	10.0
North Platte	18 5	17.0	6.0	11 3
Scotts Bluff	19.2	16.0	6 0	12.0

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline			Kero.
	Tank-wag. dlr.	Tank-car con'r.	Inc. tax	tank-wag.
N. Orleans, La.	19 0	16 5	*10 0	†12 0
Baton Rouge	17 0	14 5	8 0	12.0
Alexandria	17 5	15 0	8.0	10.5
Lafayette	18 0	15 5	8.0	12.5
Lake Charles	18 0	15 5	8 0	12.5
Shreveport	16.5	14.0	8 0	9.5
Kn'ville, Tenn.	20.0	17.5	8 0	14.0
Memphis	18 0	15 5	8 0	12.0
Chattanooga	19 5	17.0	8 0	13 5
Nashville	19 0	16 5	8 0	11 5
Bristol	19.0	17.75	8.0	14.5

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gallons or more in one delivery takes posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon.

Louisiana kerosene prices include 1-cent state tax.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline			Kero.
	Tank-wag. dlr.	Tank-car con'r.	Inc. tax	tank-wag.
Philadelphia, Pa.	13 75	12 25	5 0	10 5
Pittsburgh	15 0	13 0	5 0	11 0
Allentown	14 25	12 75	5 0	11 0
Erie	14 5	13 0	5 0	10 0
Scranton	14 5	13 0	5 0	11.0
Altoona	15 0	13.0	5 0	11.0
Dover, Del.	14.0	....	5.0	11.0
Wilmington	14 0	....	5 0	11 0
Springf'd, Mass.	13 5	....	4 0	8 5
Worcester	14 3	....	4 0	9 0
Hartford, Conn.	13.6	....	4.0	8 0
New Haven	13 5	....	4 0	8 0
Providence, R. I.	13.3	....	4.0	8.5

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers in Pennsylvania and Delaware, effective March 11, 1937: Consumers under contract using 100,000 gallons or more per year full compartment hose deliveries, tankcar plus .5 cent. Consumers under contract using less than 100,000 gallons per year compartment hose deliveries, undivided dealer price. Consumers under contract less than full compartment delivery, consumers not under contract less than full compartment delivery, and consumers not under contract full compartment delivery, divided dealer price. Less than 25 gallons, tank-wagon delivery, 4 cents per gallon above undivided dealer price.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline		Kero.
	Dealer	Inc. tax	tank-wag.
Muskogee, Okla.	14.5	5.0	7.0
Oklahoma City	14 0	5.0	8.0
Tulsa	14.0	5.0	6.0
Ft. Smith, Ark.	14.25	5.0	8.0
Little Rock	17.25	7.5	9.5
Texarkana	14.0	5.0	8.5

Texas

	Gasoline			Kero.
	Tank-wag.	Serv. sta.	Inc. tax	tank-wag.
Dallas, Tex.	14.0	18.0	5.0	8.0
Fort Worth	14 0	18 0	5 0	8.0
Houston	14 5	19.0	5 0	8.0
San Antonio	13.5	17.5	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gallon lots if covered by contract.

Canada*

3 Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank-wag.	Inc. tax	Kero. tank-wax.
Halifax, N. S.	24.0	8 0	18.5
St. John, N. B.	24 0	8 0	18.5
Montreal, Que.	21 0	6 0	17.5
Toronto, Ont.	22 0	6 0	17.0
Hamilton, Ont.	22.0	6 0	17.0
Winnipeg, Man.	27 5	7 0	20.7
Brandon, Man.	28.1	7.0	22.3
Regina, Sask.	27 0	7 0	22.0
Saskatoon, Sask.	29 8	7 0	24.9
Edmonton, Alta.	26 5	7 0	21.5
Calgary, Alta.	24 0	7 0	19.0
Vancouver, B. C.	23.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon price. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Retail Price Changes

Standard Oil Co. (Indiana) March 14 advanced dealer gasoline .7 cent at Decatur; March 15 advanced dealer gasoline 1.4 cent at Wichita.

New York Market

(Continued from Page 111)

barge delivery at 5 to 5¾ cents per gallon and domestic burning grades are generally quoted at 5 cents per gallon to the tankcar trade. Movement of light fuel oils has tapered off with milder temperatures currently prevailing and interest in general has waned with evidence that the seasonal consumption is due for a slump.

Gasoline was slightly more active in the western Pennsylvania refining district and spot sales were more frequent. Some Pennsylvania refiners elevated their tankcar quotations an eighth of a cent per gallon on motor fuel, but light and heavy fuel along with kerosene were depressed by an equal amount. Jobbers are entering shipping instructions at an increased rate for bright stock and cylinder oils but the open market trading remains dull. Considerable interrefinery trading is currently reported.

B. F. Tomblin, former Ada, Okla., operator, who has been in western Kansas for the past year, has moved from Dodge City to Wichita. He now is giving most of his attention to northeastern and southeastern Kansas. Mr. Tomblin has taken acreage in the name of the Midland Oil Co.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of March 22, 1938

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 oct. and below	.04¼	.04⅜
63-66 octane	.04½	.04⅝
67-69 octane	.04¾	.04⅞
70-72 octane (regular)	.05⅛	.05¼
60-62 400 grades:		
62 oct. and below		.04¼
63-66 octane	.04½	.04⅝
67-69 octane	.04¾	.04⅞
70-72 octane (regular)	.05⅛	.05¼
64-66 375	.04⅝	.04¾
68-70 360	.04⅞	.05⅛

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.04¼	.04⅜
63-66 octane	.04½	.04⅝
67-69 octane	.04¾	.04⅞
70-72 octane (regular)	.05⅛	.05¼
60-62 400	.04¼	.04⅜
64-66 375	.04⅝	.04¾

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)

U. S. Motor grades:		
62 octane and below	.04¼	.04½
63-66 octane	.04½	.04⅝
67-69 octane	.04⅞	.05
70-72 octane (regular)		.05½

ARKANSAS (Ark., N. La., Miss. del.)—

U. S. Motor grades:		
62 octane and below	.04¼	.04½
67-69 octane	.04⅞	.05
70-72 octane (regular)	.05½	.05⅝

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.04¼	.04⅜
63-66 octane	.04½	.04⅝
67-69 octane	.04¾	.04⅞
70-72 octane (regular)	.05⅛	.05¼
60-62 400 grades:		
62 octane and below	.04¼	.04⅜
63-66 octane	.04½	.04⅝
67-69 octane	.04¾	.04⅞
70-72 octane (regular)	.05⅛	.05¼
64-66 375	.04¾	.05
68-70 360	.05	.05¼

PENNSYLVANIA (Inland refineries)—

58-60 U. S. Motor:		
Below 60 octane	.04⅞	.05⅛
65 octane	.06⅛	.06⅛
68-70 octane	.06⅞	.07⅛

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.06¾	.08¼
58-60 400, 65 oct. and higher	.08½	.09⅛

EAST COAST (Domestic)—

U. S. Motor, 60-64.9 octane:		
New York (Bayonne)		.06½
Philadelphia	.06½	.06¾
Boston	.06½	.06¾
Baltimore	.06½	.06¾
Charleston, S. C.	.07	.07¼
U. S. Motor, 65 and above:		
*New York (Bayonne)	.06¾	.07
Philadelphia	.06¾	.07
Boston	.06¾	.07
Baltimore	.07	.07¼
Charleston, S. C.	.07¼	.07½

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane	.05	.05½
60-64.9	.05¼	.05⅝
65 octane and higher	.05½	.05¾

Naphtha

PENNSYLVANIA (Inland refineries)—

52-56 450 (blending)	.04¾	.05

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70	.02½
Grade 18-55	.03

NORTH TEXAS—

Grade 26-70	.02½
Grade 18-55	.03

CALIFORNIA—

75-85 375-390	.06½	.07

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

Grade 26-70	.02⅞

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 l.b.p., 110 flash, 540-550 e.p.	.04⅛	.04¼
41-43 gr., 300-520 e.p., 110-125 flash, 500-520 e.p.	.04¼	.04⅜
46-48 gr., 210-230 l.b.p., 480 max. e.p.	.04⅝	.04¾

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.04⅛	.04¼
42-44	.04¼	.04⅜

NORTH TEXAS—

41-43	.04⅛	.04¼

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

41-43	.04⅜	.04½

ARKANSAS (Ark., N. La., Miss. del.)—

41-43	.04½	.04⅝

PENNSYLVANIA (Inland refineries)—

45	.05⅛	.05¼
46	.05¼	.05⅜
47	.05⅜	.05½

CHICAGO (Based on Group 3)—

41-43	.04⅛	.04⅜
42-44	.04⅜	.04⅝

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.05¼	.06½

NEW YORK (Bayonne, N. J.)—

41-43		.05⅜

***GULF COAST (domestic)—**

41-43	.04⅝	.04¾

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.04	.04⅛
No. 1 prime white, 38-42	.03⅞	.04
No. 1 straw, 38-40	.03¾	.03⅞
No. 2 straw, 32-36	.03⅝	.03¾
No. 2 dark, 32-36	.03⅜	.03½
No. 3 zero to 15, 28-32	.03⅜	.03½
No. 3, 15 and above, 28-32	.03	.03⅛

NORTH TEXAS—

No. 1 prime white, 38-42	.03⅞	.04
No. 1 straw, 38-40		.03⅞

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

No. 2, 32-36	.03½	.03⅝

ARKANSAS (Ark., N. La., Miss. del.)—

No. 2, 32-36	.03¾	.04

CHICAGO (Based on Group 3)—

Range oil	.04	.04⅛
No. 1 prime white, 38-40	.04	.04¼
No. 1 straw, 38-40	.03⅞	.04
No. 2 straw, 32-36	.03¾	.03⅞
No. 2 dark, 32-36	.03½	.03¾
No. 3, zero to 15, 28-32	.03⅜	.03½
No. 3, 15 and above, 28-32	.03	.03⅛

NEW YORK (Bayonne, N. J.)—

*No. 1		.05¾
*No. 2		.04¾
*No. 4		.04¾

*Barge deliveries one-eighth to one-fourth cent under above tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal.; fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02¾	.03
No. 4, low cold test, 24-28	1.10	1.15
No. 4, 15 and above, 24-28	.90	.95
No. 5, low cold test, 18-22	.72½	.77½
Below 18 fuel oil, industrial	.55	.60

NORTH TEXAS—

U.G.I. gas oil	.02¾	.03
No. 4, low cold test, 24-28	1.10	1.15
No. 5, low cold test, 18-22	.80	.85
Below 18 fuel oil, industrial	.55	.60

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

10-14 fuel oil, industrial	.80	.85

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅞	.03⅛
No. 4, low cold test, 24-28	1.10	1.15
No. 4, 15 and above, 24-28	.90	.95
No. 5, low cold test, 18-22	.72½	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low cold test, 10-16	.60	.70
No. 6, 15 and above, 10-16	.42½	.55

PENNSYLVANIA (Inland refineries)—

36-40	.04⅝	.04½

CALIFORNIA

Los Angeles:		
30-40 gas oil, per bbl.	1.30	1.50
24 plus diesel, per bbl.	1.35	1.50
24 plus diesel (bunkers)	1.40	1.60
12-16 (bunkers at tidewater)	.90	1.00
10-16 (cargo lots)	.80	1.00
12-17 tankcars)	.75	1.00
10-17 (high sulfur)	.65	.95
San Joaquin Valley:		
10-18 (tankcars)	.60	.85
24 plus diesel, per bbl.	1.35	1.50
San Francisco:		
24 plus diesel, per bbl.	1.45	1.55
24 plus diesel (bunkers)	1.55	1.65
10-16 (bunkers)	1.00	1.05

GULF COAST—

28-30 gas oil	.04⅛	.04¼
28-30 diesel (bunkers)		1.90
Bunkers (bulk cargoes)		.85
Bunker C (bunkers)	.90	1.05

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.04¾
28-30 diesel (lighterage 6¼c per bbl.)		1.85
28-30 diesel (tankcars)	.04¾	.05
Bunker C (to ocean-going ships in N. Y. harbor)		1.15
Industrial fuel (tankcars)	.04	.04¼

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

Bright Stocks:		
190-200 D, 15-25		.19
150-160 D, 0-10		.16
150-160 D, 15-25		.15
150-160 E, 15-25		.14½
100-110 D, 0-10		.14½
Steam refined:		
631 green (treated)		.13½
600 dark green (untreated)		.05

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pour test	.18½	.19½
15 pour test	.17½	.18½
20 pour test	.16½	.17½
25 pour test	.15½	.16½
Steam refined:		
600	.08½	.09
650	.10½	.11½
600 Pennsylvania flash	.11	.13
630 flash	.14	.15
600 Warren E filtered	.13	.14

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

Zero to 10 Cold Test:	
150-3	.09
180-3	.10
180-4	.09½
200-3	.10½
200-4	.10
250-3	.11½
250-4	.11
280-3	.12½
280-4	.12
300-3½	.13
400-3½	.14
100-2½ paraffin oil	.06
15-20 Cold Test:	
200-3	.10
200-4	.09½
250-3	.11
250-4	.10½
280-3	.12
280-4	.11½

GULF COAST—

Pale Oils:		
200-3	.07	.07¼
300-3	.07½	.07¾
500-3½	.08½	.08¾
750-3½	.08⅝	.09¼
1,200-3½	.09½	.09¾
1,500-4	.09¾	.10
Red Oils:		
200-5-6	.07¼	.07½
300-5-6	.07¼	.07½
500-5-6	.08	.08½
750	.08¾	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)—

Pale Oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red Oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° F. color, 400-405 flash:		
Zero pour test	.17½	.18
10 pour test	.16½	.17
15 pour test	.16	.16½
25 pour test	.15	.15½
180 vis. at 70° F., 3 color:		
25 pour test	.16	.16½
200 vis. at 70° F., 3 color:		
Zero pour test	.20½	.21
10 pour test	.19½	.20
15 pour test	.19	.19½
25 pour test	.17	.17½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.02¼	.02½

PENNSYLVANIA (Inland refineries)—

122-124 (a.m.p.) w.c. scale	.0195	.0200
124-126 (a.m.p.) w.c. scale	.0195	.0200

NEW YORK—

Wax in bags fully refined:		
122-125 (a.m.p.) wax		.0420
125-127 (a.m.p.) wax		.0435
128-130 (a.m.p.) wax		.0445
130-132 (a.m.p.) wax		.0455
133-135 (a.m.p.) wax		.0500
135-137 (a.m.p.) wax		.0515
124-126 (a.m.p.) w.s.	.0205	.0215
124-126 (a.m.p.) y.s.	.0200	.0210
Petrolatum in barrels, carload lots:		
Dark green	.02	.02⅛
Amber	.02⅜	.02½
Extra amber	.02⅝	.02¾
Lily white	.05½	.05¼
Snow white	.06⅛	.06¼
Cream	.04⅛	.04¼

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.04⅞	.05
60-62 400	.04⅞	.05
61-63 390	.05	.05⅛
64-66 375	.05	.05⅛

LOS ANGELES—

U. S. Motor grades:		
55-65 octane	.05¼	.05½
65-69 octane		.05⅝
Above 69 octane		.06¼

KEROSENE

GULF COAST—

41-43 prime white	.04⅝	.04¾
41-43 water white	.04¾	.04⅞
44 water white	.04⅞	.05

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.a.s. in bbls.)—

Cylinder Stocks:		
600 Warren E	.20½	.21
600 S.R. unfiltered	.16	.16½
630 S.R. unfiltered	.18	.18½
600 flash S.R.	.18½	.19
630 flash, S.R.	.21½	.22
Bright Stocks:		
8 color	.23	.23½
6½ plus color in dilution	.22½	.23

NEUTRAL OIL

200-3 color	.24½	.25
150-3 color	.22½	.23

PARAFFIN WAX

NEW YORK (prices per pound)—

123-126 a.m.p.		.0375
125-127 a.m.p.		.0387
128-130 a.m.p.		.0412
133-135 a.m.p.		.0437
135-137 a.m.p.		.0455
Crude Scale:		
124-126 w.s.	.0205	.0215
124-126 y.s.	.0200	.0210

CRUDE OIL PRICES

Oklahoma, Kansas, North Central and East Central Texas

(Effective January 28, 1937)

East Texas (May 22, 1937)*	$1 35
Van, Tex.†	1 10
Camp Hill, Tex.	1 27
Cass County, Tex.‡	1 25
Talco	73
Altus and Tipton, Okla.§	1 20
Other fields (see gravity table).	

*All companies. †Humble Oil & Refining Co.; Pure Oil Co. ‡Texas Co. §Gulf Oil Co. Talco by Humble Oil & Refining Co.

West Texas

See gravity table.

Pecos County*	$ .91
Pecos shallow†	.81

*Shell Petroleum Corp., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Petroleum Corp.

Rocky Mountain States

(Effective January 28, 1937)

Iles, Colo., light*	$1 18
Iles, Colo., heavy*	1 12
Greybull, Wyo.*	1 30
Torchlight, Wyo.*	1 30
Grass Creek, Wyo., light*†	1 30
Grass Creek, Wyo., heavy (Nov. 4, 1936)*†	.62
Hamilton Dome, Wyo. (Jan. 1, 1937)*	.67
Elk Basin, Wyo., light*†	1 30
Frannie, Wyo., heavy*	.62
Frannie, Wyo., light	.70
Hogback, N. M. (Jan. 28, 1937)*	1 33
Salt Creek, Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis.	
Big Muddy, Wyo.†‡	1 23
Rock Creek, Wyo.†	1 20½
Lea County, N. M. (see West Texas gravity table).	
Artesia, N. M. (Jan. 28, 1937)‡	.90
Maljamar, N. M. (Jan. 28, 1937)‡	.90
Canon City and Florence, Colo.	1 10
Lance Creek, Wyo.	.97
Lander, Wyo. (Jan. 1, 1938)¶	.51¼
Sunburst, Mont. (Nov. 16, 1937)†	.90
Cat Creek, Mont. (Jan. 1, 1938)‡	$1.30
Garland, Wyo. (Jan. 1, 1937)†	.50

*Stanolind Oil & Gas Co. †Ohio Oil Co. ‡Continental Oil Co. ¶Hudson Oil Co.

Southwest Texas

(Effective January 28, 1937)

Pettus	$1 37
Salt Flat, Darst Creek, Hilbig, Carroll, Clark, Zoboroski	1 09
Lytton Springs	1.12
Luling	1 00

Saxet and Taft take same gravity table as Gulf Coast.

North Louisiana and Arkansas

Smackover, all grades	$ .90
Tullos and Urania	1.02
El Dorado East field	.90
Union County, Ark.	.90
Ouachita County, Ark.	.90
Lisbon, La. (Dec. 13, 1937)*	.98

*Caddo Crude Oil Purchasing Co.

Gulf Coast

(Effective January 28, 1937)

Choctaw and Darrow, La. See note below

Clay Creek, Tex.	$1.00
Garden Island, La.	1.37
Cleveland, Tex.	1.27
Hardin, Tex.	1.15
Lafitte, La.	1.24
Livingston, Tex.	1.27
Welsh, La.	.98
Tepetate (La.) (Jan. 28, 1937)	1 24

Duval, Jim Hogg, Webb and Zapata counties, Texas, and Heyser and Placedo fields take Mirando gravity prices. Jennings, La., 5 cents lower than Gulf Coast prices on each degree. Segno, Texas, takes Gulf Refining Co.'s Gulf Coast prices. Choctaw and Darrow, Louisiana, posted for first time by Standard Oil Co. of Louisiana, start below 21 degrees at 90 cents, with 3-cent differential up to 25 gravity, then 2-cent differential up to 40 and above, $1.36. Effective October 1, 1937, Stanolind Oil & Gas Co. in Evangeline, La., pays 92 cents for below 20 gravity, adding 2 cents for each degree upward to 40 and over, at $1.34.

Middle Western States

OHIO OIL CO.
(Effective January 28, 1937)

Lima	$1.00
Illinois	1.35
Princeton, Ind.	1.35
Midland, Mich. (Jan. 5, 1938)*	1.12
West Branch, Mich. (Dec. 29, 1937)†	.80
Buckeye (Jan. 8, 1938)	1.09½
Arenac, Mich. (Dec. 29, 1937)†	.80
Muskegon, Mich.	1.00
Eastern Kentucky:	
Big Sandy River	1.42
Kentucky River	1.50
Western Kentucky	1.40

*Posted by Pure Oil Co.
†McClanahan P. L. and Simrall.
Midland, Mich., price posted by Simrall Corp. and Pure Oil Co. includes Greendale, Porter, Beaverton, Crystal and equal grades. West Branch and Arenac by Simrall Corp. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky. Buckeye posted by Simrall Corp. and Pure Oil Co.

Eastern States

TIDE WATER ASSOCIATED OIL CO.
(Effective March 7, 1938)

Bradford, Pa.	$2.05
Allegany, N. Y.	2.05

SOUTH PENN OIL CO.
(Effective March 7, 1938)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	2.05
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	1.71
Pennsylvania Grade Oil in Eureka Pipe Line lines	1.65
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.55
Corning Grade Oil in Buckeye Pipe Line Co.'s lines	1.27

PENNZOIL CO.
(Effective March 7, 1938)

Pennsylvania Grade Oil in National Transit Lines:	
Group A	1.98
Includes Cochran, Franklin, Hamilton and Doolittle districts.	
Group B	1.97
Includes Tidioute district.	
Group C	1.96
Includes Turkey and Tidioute districts.	
Group D	1.95
Includes Bear Creek and Porkey districts.	
Group E	1.93
Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts.	

PURE OIL CO.
(Effective March 7, 1938)

Cabin Creek, W. Va.	$1.65
Bradford Hollow, W. Va.	1.65
Kelly Creek, W. Va.	1.65

Canada

Ontario (Sept. 9, 1933)*

Petrolia	$2.10
Oil Springs	2.17

TURNER VALLEY NAPHTHAS AND CRUDE OIL
(January 5, 1938, by Imperial Oil, Ltd.)

Clear naphtha and discolored naphtha, 65 gravity and higher	$2.14
Discolored naphtha and crude oil, 40-40.9 gravity	1.14
Increasing 2 cents for each degree gravity with top price for 64-64.9 gravity	1.62
These prices f.o.b. producers field tankage.	

*Imperial Oil, Ltd.

Mexico

Heavy Mexican crude	$.85

*In U. S. currency, f.o.b. ship, based on February spot market transactions.

Rocky Mountain Runs

Production estimates for the week ended March 19, follow:

	Bbls.
WYOMING	
Salt Creek	16,120
Big Muddy	1,190
Dallas Derby	570
Frannie	1,580
Garland	1,680
Hudson	290
LaBarge	1,110
Lance Creek	11,540
Lost Soldier	1,640
Medicine Bow	3,630
Oregon Basin	1,450
Osage	700
Quealy dome	820
Rock River	2,490
South Casper	490
Poison Spider	280
Wertz	810
Miscellaneous	750
Total Wyoming	47,140
MONTANA	
Border	80
Cat Creek	640
Cut Bank	6,500
Dry Creek	410
Kevin-Sunburst	3,320
Lake Basin	20
Pondera	770
Total Montana	11,740
COLORADO	
Florence	170
Fort Collins and Wellington	290
Iles dome	2,370
Moffat	370
Orchard	40
Rangely	100
Tow Creek	140
Price	540
Total Colorado	4,020
NEW MEXICO	
Cooper	5,070
Eaves	980
Eunice	26,710
Hardy	1,670
Hobbs	15,300
Jal	1,280
Langlie	3,110
Lynch	630
Lynn	790
Mattix	2,560
Monument	28,090
North Lynch	50
Penrose	5,100
Rhoades	100
Skelly	1,910
South Eunice	2,670
Vacuum	680
Artesia-Maljamar	7,170
Getty	200
Hogback	200
Rattlesnake	630
Table Mesa	80
Total New Mexico	104,980
Total Rocky Mountain region	167,880

"Then Came Oil"

C. B. Glasscock, in his newest book, "Then Came Oil," lets others provide statistics and ponderous economic or technical discussion. He presents the story of petroleum in Oklahoma, "the last frontier," in a fashion which enables the reader to see its principal figures as the audacious, square-shooting, unconquerable men they were—or are, for many of them still live. The drama, tragedy and humor attending the search for oil have first place in the book. Dry chronicle has no place at all. Bobbs-Merrill Co. is the publisher.

Crude Prices by Gravities

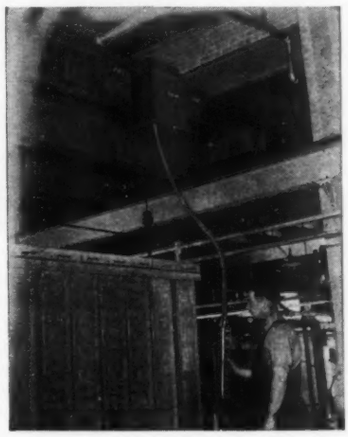
	Oklahoma-Kansas 1	Oklahoma-Kansas 2	North and Central Texas 3	East Central Texas (Mexia district) 4	North Louisiana-Arkansas 5	Gray County, Texas 6	Hutchinson-Carson counties, Texas 7	Rodessa, Louisiana-Texas and Panola County, Texas 8	Conroe, Tomball, Raccoon Bend, (Deep) Satsuma 9	Gulf Coast 10	Gulf Coast 11	Lea County, N. Mex. West Texas except Pecos County 12	Mirando district, Texas 13	Marion County, Texas 14	Refugio, Greta, Saxet, Taft, Texas 15	Anahuac, Flour Bluff, Dickson, Turtle Bay 16	White Castle, Louisiana 17	Iowa, Louisiana 18	Cayuga, Texas 19
Bel. 18	....	....	....	....	....	....	....	....	....	$.90	....	....	....	....	....	....	....	$.90	....
18-18.9	....	....	....	....	....	....	....	....	....	.92	....	....	....	....	....	....	....	.92	....
19-19.9	....	....	....	....	....	....	....	....	....	.94	....	....	....	....	....	....	.94	.94	....
20-20.9	....	....	....	....	....	....	....	....	..	.96	$.95	....	$.96	....	$1.01	....	.96	.96	....
21-21.9	....	....	....	....	....	....	....	....	....	.98	.98	....	.98	....	1.03	....	.98	.98	....
22-22.9	....	....	....	....	....	....	....	....	....	1.01	1.01	....	1.00	....	1.05	....	1.01	1.01	....
23-23.9	....	....	....	....	....	....	....	....	....	1.04	1.04	....	1.02	....	1.07	....	1.04	1.04	....
24-24.9	....	....	....	....	....	....	....	....	....	1.07	1.07	....	1.04	....	1.09	....	1.07	1.07	$.88
Bel. 25	....	$.98	....	....	$.90	....	....	$.93	....	....	....	....	....	$.90	....	....	....	....	....
25-25.9	....	1.00	....	....	.92	....	....	.95	....	1.10	1.10	$.78	1.06	.92	1.11	....	1.10	1.10	.90
26-26.9	....	1.02	....	....	.94	....	....	.97	....	1.13	1.13	.80	1.08	.94	1.13	....	1.13	1.13	.92
27-27.9	....	1.04	....	....	.96	....	....	.99	....	1.15	1.15	.82	1.10	.96	1.15	....	1.15	1.15	.94
28-28.9	....	1.06	....	....	.98	....	....	1.01	....	1.17	1.17	.84	1.12	.98	1.17	....	1.17	1.17	.96
Bel. 29	$1.06	....	$.96	$1.03	....	....	....	....	$1.20	....	....	....	....	....	....	....	....	....	....
29-29.9	1.08	1.08	.98	1.05	1.00	....	....	1.03	1.22	1.19	1.19	.86	1.14	1.00	1.19	....	1.19	1.19	.98
30-30.9	1.10	1.10	1.00	1.07	1.02	....	....	1.05	1.24	1.21	1.21	.88	1.16	1.02	1.21	$1.16	1.21	1.21	1.00
31-31.9	1.12	1.12	1.02	1.09	1.04	....	....	1.07	1.26	1.23	1.23	.90	1.18	1.04	1.23	1.18	1.23	1.23	1.02
32-32.9	1.14	1.14	1.04	1.11	1.06	....	....	1.09	1.28	1.25	1.25	.92	1.20	1.06	1.25	1.20	1.25	1.25	1.04
33-33.9	1.16	1.16	1.06	1.13	1.08	....	....	1.11	1.30	1.27	1.27	.94	1.22	1.08	1.27	1.22	1.27	1.27	1.06
34-34.9	1.18	1.18	1.08	1.15	1.10	....	....	1.13	1.32	1.29	1.29	.96	1.24	1.10	1.29	1.24	1.29	1.29	1.08
Bel. 35	....	....	....	....	....	$.96	$.91	....	....	....	....	....	....	....	....	....	....	....	....
35-35.9	1.20	1.20	1.10	1.17	1.12	.98	.93	1.15	1.34	....	1.31	.98	1.26	1.12	1.31	1.26	1.29	1.29	....
36-36.9	1.22	1.22	1.12	1.19	1.14	1.00	.95	1.17	1.36	....	1.33	1.00	1.28	1.14	1.33	1.28	1.29	1.29	....
37-37.9	1.24	1.24	1.14	1.21	1.16	1.02	.97	1.19	1.38	....	1.35	1.02	1.30	1.16	1.35	1.30	1.29	1.29	....
38-38.9	1.26	1.26	1.16	1.23	1.18	1.04	.99	1.21	1.40	....	1.37	1.04	1.32	1.18	1.37	1.32	1.29	1.29	....
39-39.9	1.28	1.28	1.18	1.25	1.20	1.06	1.01	1.23	1.42	....	1.39	1.06	1.34	1.20	1.39	1.34	1.29	1.29	....
40,over	1.30	1.30	1.20	1.27	1.22	1.08	1.03	1.25	1.44	....	1.41	1.08	1.36	1.22	1.41	1.36	1.29	1.29	....

Column 1—Companies posting are Barnsdall, Bell, Champlin, Continental, Cushing, Derby, Bay, Eason, El Dorado, Cities Service, Falcon, Globe, Gulf, Johnson, Kanotex, National, Phillips, White Eagle, Stanolind, Sunray, Texas, Sun Vickers and Wilcox.
Column 2—Anderson & Prichard, Carter, Cosco, Deep Rock, Magnolia, Mid-Continent, Pure, Rock Island, Shell, Sinclair, Skelly and Tide Water.
Column 3—All purchasers.
Column 4—Humble Oil & Refining Co. and Sinclair Oil Purchasing Co.
Columns 5, 6, 7 and 8—All purchasers.
Column 9—Humble Oil & Refining Co. and Sun Oil Co. Tidewater Oil Co.'s schedule starts at 35 degrees, $1.34 with 2-cent spread up to 40 and over at $1.44. (Raccoon Bend prices are for deep sand oil.)
Column 10—The Texas Co. (Gulf Refining Co. pays same prices up to and including 34 gravity, but continues its 2-cent spread up to 40 and over at $1.41.)
Column 11—Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Sun Oil Co.
Column 12—All purchasers.
Column 13—All purchasers (effective July 6, 1937).
Column 14—Magnolia Petroleum Co.
Column 15—Humble Oil & Refining Co. (effective July 6, 1937).
Column 16—Humble Oil & Refining Co.
Columns 17 and 18—Shell Petroleum Corp.
Column 19—Tide Water Oil Co.

New or Improved Equipment

Wide Speed Range Is Provided by Pushbutton Controller

The new P&H pushbutton master variable speed-controller, announced by Harnischfeger



Corp., Milwaukee, Wis., provides many advantages. This new-type controller has five control steps. The element is so designed that it can be grouped into a neat, sturdy pushbutton case, with groupings of elements depending upon the number of motions controlled. By this is meant that it is possible to have a single-speed hoist, together with a variable-speed trolley or bridge, in one pushbutton case. All this can be suspended from the hoist by a multi-conductor cable. It does away with ropes dangling from the hoist.

In operating this variable speed-button the operator depresses the button, which extends through the pushbutton housing. The motor will start slowly, and as the operator depresses the button farther, the speed of the motor increases. Five distinct steps or speeds are obtainable. Any speed may be held by the operator in either accelerating or decelerating the motor. This type of control is adaptable for either DC or AC slip-ring motor operation. It can be used on DC installations with either low-break or dynamic lowering control.

Two of the pushbutton elements perform the same function as the standard five-speed master drum controller now used in crane cabs which are approximately 8 to 10 feet wide, 10 to 12 feet high, and 12 to 16 feet long. Compactness of design was accomplished in part through use of special and more costly materials. The accompanying picture shows a P&H I-beam crane equipped with the new control. The face-plate type with pendant rope is shown.

Here and There With Men Who Manufacture Equipment

George H. Bucher, executive vice president of the Westinghouse Electric & Manufacturing Co., has been elected president. Frank A. Merrick was elected vice chairman. Paul Judson Myler, president of the Canadian Westinghouse Co., became a director of the Westinghouse Electric & Manufacturing Co. at the same meeting.

The Wailes Dove-Hermiston Corp., New York, has appointed the Aird-Don Co., Troy, N. Y.; Los Angeles Rubber & Asbestos Co., Los Angeles, Calif.; Machinists' Tool & Supply Co., Los Angeles, and Universal Valve & Fittings Co., Cleveland, Ohio, as distributors of Bitumastic industrial protective coatings.

The Chicago office of the Crosby Steam Gage & Valve Co., New York, will move into new quarters in the Marquette Building April 1. S. H. Breor will continue as western district sales manager, assisted by Charles Dempsey and Douglas Kier.

The Barrett Co., 40 Rector Street, New York, underground pipe protection division, has established a coating warehouse service in Tulsa. Shipments from Tulsa will be made by the Standard Asbestos Manufacturing & Insulating Co., 520 East Fifth Street.

Thiokol Corp., manufacturer of oil-proof synthetic rubber, will have its general offices and laboratory at 870 North Clinton Avenue, Trenton, N. J., after April 1. For seven years the company's plant and general offices have been in Yardville, N. J.

The Meehanite Metal Corp., Pittsburgh, Pa., announces several new licensees, including the Atlas Foundry Co., in the Detroit, Mich., area; E. Long, Ltd., Orillia, Ontario, and the General Iron Works, Denver, Colo., a division of the Stearns-Roger Manufacturing Co.

Star Opens Office in Tulsa

Star Manufacturing Co., of Oklahoma City, Okla., manufacturer of structural steel buildings, cooling-tanks and -towers and steel tool-houses, has opened a sales and engineering office at 210 Thompson Building, Tulsa. The office is in charge of Ed. Killough, who has been transferred from Oklahoma City. Phillip Milne is in charge of engineering. All the company's engineering and sales work for the Tulsa territory will be handled from this office. Recently Star Manufacturing Co. opened an office in Houston, Tex.

Prevents Two Lengths of Hose From Becoming Entangled

A new oxy-acetylene hose, the Duoweld, has been announced by the B. F. Goodrich Co., Akron, Ohio. It consists of two strands of one-quarter inch, two-braid hose with corrugated cover which are molded together as a single unit. The cover on one strand is red, the other green. This color distinction is adopted as an aid to the operator in identify-

ing the acetylene from the oxygen line. Advantages claimed for this dual construction are that it prevents the two lengths of hose from becoming tangled, that it eliminates kinking, and that it is much less likely to snag on objects that may be nearby.

Goodrich Duoweld hose is offered in 12½-foot, 25-foot, and 50-foot lengths. Each length is separated and secured with metal ferrules about 1½ feet from the ends for easy attachment to equipment.

Daniels Export Representative

Guy E. Daniels has been named export representative for the Wilson Manufacturing Co., of Wichita Falls, Tex., manufacturer of portable rotary rigs and oil-field winches. Transfers of field representatives also have been made in the Wilson organization. J. V. Wintle is now located in Tulsa, in charge of sales activities of Oklahoma and Kansas. Russell Moore, formerly sales representatives in West Texas, has been transferred to South Texas, with headquarters in Houston.

MUDSOL SERVICE NOW IS AVAILABLE ON GULF COAST

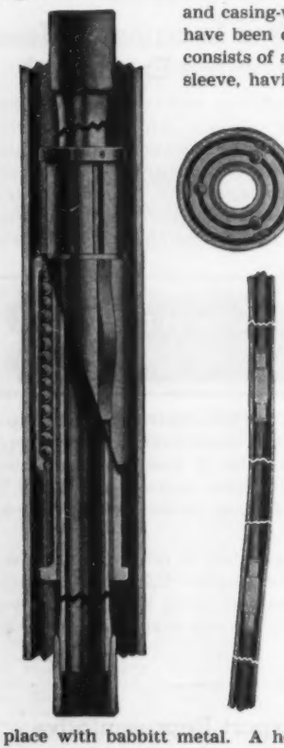
Mudsol well-treating service is now offered in the Gulf Coast, South Texas and Arkansas districts exclusively by the W-K-M Co., Inc., Houston, Tex. Mudsol treatment, the company says, thoroughly dissolves paraffin, asphalt, drilling-mud, and other crusts from both the well-screen and the formation, and provides for a natural entrance of all the oil in both the old and new wells.

Over 500 wells treated in the California territory, W-K-M says, show that Mudsol materially increases the production when such obstructions exist. Many operators have recognized the value of treating new wells, many of which do not come in properly due to the sheath of rotary drilling-mud which has penetrated the producing formation.

W-K-M has complete truck units with chemical tanks, pumps, etc., to apply Mudsol treatment, it not being necessary to pull screen. In writing to W-K-M concerning their problems, operators should give the producing history and characteristics of their wells.

Wear on Tubing-Couplings and Casing-Walls Is Diminished

L. H. "Spec" Morris, 235 Metropolitan Building, Muskogee, Okla., is the distributor of a new type antifriction tubing-guide recently developed by O. C. Willis. The guide incorporates features designed to eliminate the wear on tubing-couplings and casing-walls, where wells have been drilled crooked. It consists of an inner and outer sleeve, having three grooves, which contain 14 ball bearings each, affording a ball-bearing structure for the guide to operate on when the tubing works up and down. It is made of scientifically hardened tubing stock.



Installation consists of slipping the guide to the center of a joint of tubing, where couplings otherwise would rub the walls of the casing, and securing it in place with babbitt metal. A hole is provided in the wall of the inner sleeve to make this operation possible. The outer sleeve is held stationary against the wall of the casing by three strong leaf-like springs. The inner sleeve is two feet long, and the outer sleeve one foot. This affords a one-foot travel to take care of the tubing stretch and recovery of the tubing string. There is ample space between the inner and outer sleeves, and also between the outer sleeve and the casing, for gas to pass freely. It is said to be impossible for an accumulation of paraffin to interfere with the free action of the guide.

Nugent Is Making Three Larger Sizes of Pressure Oil Filters

Three larger sizes of pressure oil filters have been developed by William W. Nugent & Co., 410 North Hermitage Avenue, Chicago, and added to the company's former group of five. The new filters are designated as figure 1116HA, sizes 8R, 8S, and 8L. They are designed to fill the need for larger capacities in one unit, rather than several smaller ones in parallel.

The filters are said by the manufacturer to be particularly suitable for diesel engines, oil engines, gas engines, rolling mills, gear drives, large bearings, hydro turbines, ore crushers, ammonia compressors, air compressors and pumps. They are said to filter any liquid which is not injurious to the materials of construction, such as kerosene, gasoline, screw-cutting oil, water, carbon tetrachloride, fuel oil, lube oil, linseed oil, turpentine, etc.

The operation is like that of the company's size 4L, except there are eight closely woven textile filter bag elements wound around a central spool instead of four. The liquid filters through the bags from the inside out. Hence, when the bag is removed all the dirt comes with it as in a vacuum cleaner. The bags may be thrown away with the dirt in them, or reversed and cleaned. Extra bags are carried in stock. An automatic by-pass and relief valve are built in the bag spool to relieve extreme pressure should the bags clog. This condition is indicated by differential pressure gauges.

Thomas Made Chief Engineer

S. R. Thomas has been appointed chief engineer of Bantam Bearings Corp., South Bend, Ind. For the past year and a half Mr. Thomas has been manager of the automotive bearing division, going to Bantam after an association of four years with the Cord interests, where he was chief engineer of Auburn, Cord, and Duesenberg. His advancement will utilize more broadly Mr. Thomas' 24 years' experience in a wide variety of engineering projects and consolidate under one head the widening scope of Bantam's engineering development. He will continue in charge of the automotive work.

Berg Cleaning Tool Division Is Purchased by Frank Aurand

Frank E. Aurand, Jr., formerly associated with the Concrete Surfacing Machinery Co., Cincinnati, Ohio, has bought from that company the Berg Cleaning Tool Division, including patents, and is expanding and carrying on the cleaning-tool business under a corporate organization as Aurand Manufacturing & Equipment Co., at 2643 Colerain Avenue, Cincinnati.

Aurand (formerly Berg) cleaning tools are widely used in the oil industry to remove from metal or other rigid surfaces old paint or accumulations of foreign matter. The cleaning or chipping action is supplied by a large number of burrs or cutters loosely fastened to a rotating head. The cutters are thrown against the surface to be cleaned by centrifugal force instead of by positive geared drive. The tools are portable and used by hand and are powered either by compressed air or by self-contained electric motor.

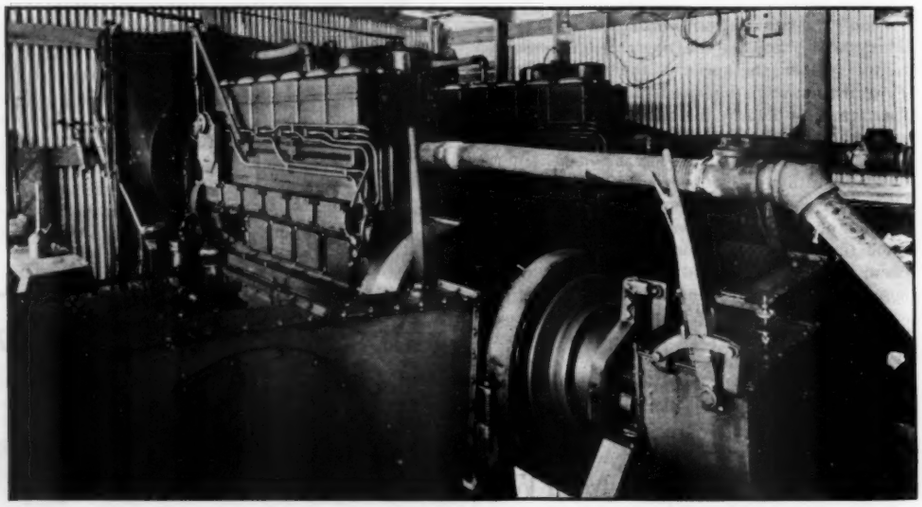
OIL-FIELD USE OF DIESELS IN CALIFORNIA GROWING

During recent months the number of diesel engines delivered to California oil-well drilling companies has shown a decided increase. An installation of two Cummins 200-horsepower diesels on a Wilson drilling rig owned by the Kern Drilling Co. has drawn attention because of low operating cost. This rig was operating at Coalinga, Calif., for the Superior Oil Co., at the time the cost tests were made. On a 24-hour-day basis the two engines burned a total of 210 gallons of fuel, which cost, delivered, 5½ cents per gallon. The lubricating oil consumption was 1¼ gallons each 24 hours for both engines.

The Kern Drilling Co. reported that the total cost of operating the Cummins-powered rig was $12.43 per 24 hours, that this was approximately one-half the cost of operating with butane and one-fourth the cost of steam.

The Iniskin Drilling Co., of Los Angeles, is taking delivery of a Cummins 200-horsepower diesel for its operations, and the H. L. Whiston Co., of Bakersfield, recently took delivery of a Cummins HP-600, 85-100-horsepower diesel power unit.

The Cummins HP-600 diesel is a complete power unit consisting of the engine mounted on a structural-steel base which also supports the radiator, fuel-tank and clutch power take-off. Starting is through a 24-volt electric system. The engine drives a Gardner-Denver 7-by-10-inch 1,500-pound pressure pump. Engine and pump were assembled by the Republic Supply Co., distributor of Gardner-Denver products.



Two 200-horsepower Cummins diesels driving Wilson drilling rig and slushpump at Coalinga, Calif.

"No Grease in Mix" Is Assured for Line of Portable Mixers

The Mixing Equipment Co., of Rochester, N. Y., has added a feature to its line of Lightnin portable mixers in its guarantee of "no grease in the mix."

Using a new type prelubricated sealed ball bearing in the important extended bearing, the manufacturer guarantees that no grease or oil will ever run down the shaft, either from operation or careless lubrication. This method of grease prevention was selected after exhaustive tests of seals, oil traps, etc., covering a period of three years.

The life of the sealed ball bearing, after exhaustive breakdown tests, is expected to be lengthened by the adequate lubrication provided and because, according to the manufacturer, no grit or dirt can enter this bearing. Maintenance at this point is reduced and a double saving in time and lubricant is made. Replacements can be made on existing mixers.

Bulletins, Booklets and Other Literature for the Trade

A four-page bulletin describing Paranite-G.O.P. oil loading hose has been issued by the Manhattan Rubber Manufacturing division of Raybestos-Manhattan, Inc., Passaic, N. J.

In an illustrated brochure, "Industrial Friction Materials," Johns-Manville, 22 East Fortieth Street, New York, has gathered data on the industrial brake linings and blocks and clutch facings which it manufactures for all types of industrial equipment. A chart simplifies the selection of the most suitable friction material for any specified service.

D. W. Haering & Co., Inc., announces publication of its house organ, H-O-H Lighthouse, in an improved format with striking cover and new series of feature articles dealing with the water requirements and problems of specific industries. The issue which inaugurates the new series is devoted to a discussion of refinery water conditioning.

A bulletin prepared by Sullivan Machinery Co., Claremont, N. H., announces the new Sullivan Featherweight drill rig.

Chaplin-Fulton Manufacturing Co., 28 Penn Avenue, Pittsburgh, Pa., announces its 1938 catalog of 76 pages covering Fulton gas-regulators, with automatic cutoff, for natural gas, and the Fulton duplex sensitive gas-governor for manufactured gas.

A bulletin on the Wilson-Snyder heavy-duty oil-country power pump is available from Wilson-Snyder Manufacturing Corp., Pittsburgh, Pa.

Bardco Corp. of America, 6670 Lexington Avenue, Los Angeles, Calif., is offering a bulletin describing the new Bardco power unit for oil-field and refinery equipment.

A 50-page booklet, "The Monometer and Its Uses," may be obtained by writing the Meriam Co., 1955 West 112th Street, Cleveland, Ohio. Conversion tables for various indicating fluids, instructions for installation, and tables for measurement of open flows of gas wells are given.

Pennsylvania Transformer Co., Pittsburgh, Pa., is sending on request a bulletin giving information concerning the company's line of transformers and illustrations of units for recent installations.

Special attention is paid to the Tico V-10 vertical diesel oil pumping engine in the current issue of the Bridgeport Bulletin, published by Bridgeport Machine Co., Wichita, Kans.

Atlas Store in K. M. A. Field

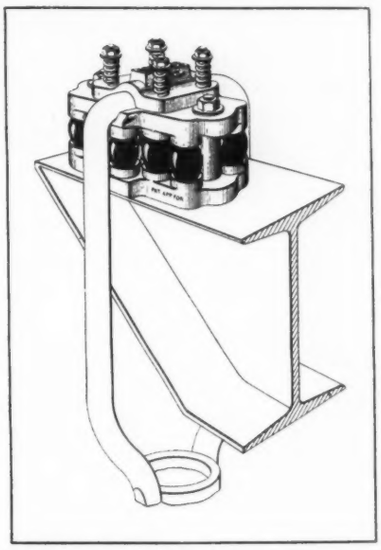
Expansion plans of Atlas Supply Co. provide a new district office in Wichita Falls, Tex., and a new store in Electra, Tex. Harold U. Everett, manager in Fort Worth, is division manager in charge of all Texas operations, and Ralph M. Carter is being transferred from the Ada, Okla., district store to assume district management, with headquarters in Wichita Falls. The first new field store will be located at Electra. Irwin N. Witherspoon, formerly of Vernon and Electra, returns to Electra as manager. The Wichita Falls office is located in the Radio Building. Mr. Everett has seen service in many active fields with Atlas for nearly 22 years, except for the period of military service overseas during the war. Mr. Carter joined Atlas in 1929, serving at Seminole, Longview, Greggtown, and Ada.

H. U. Everett

R. M. Carter

Equipment Shocks and Strains Reduced by Mason Absorber

The Mason shock-absorber announced by Mason Measure Meter Corp., Thompson Building, Tulsa,

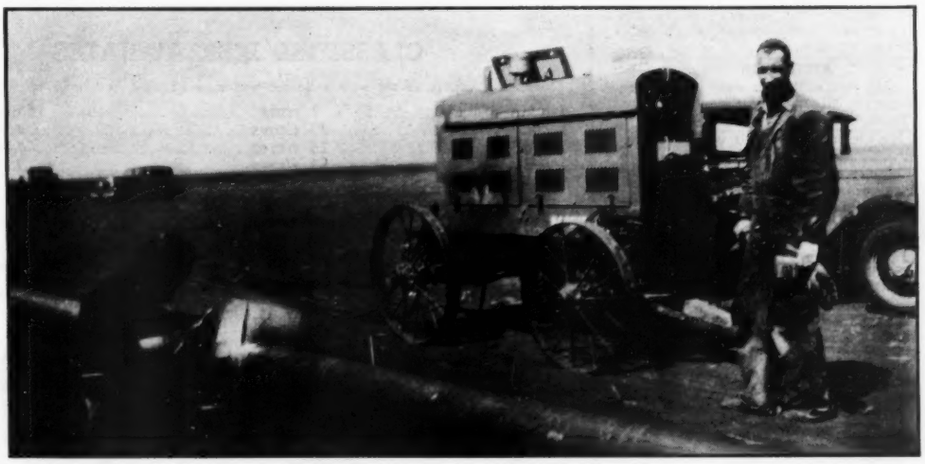


materially reduces the shocks and strains to which pumping and drilling equipment is subjected. It is equipped with rubber cylinders to cushion the pounding and vibration of oil-well action.

Tests are said to have shown that the Mason shock-absorber materially reduces rod breakage; imparts steadiness to upward and downward action; increases production by diminishing rod breakage; relieves stress and strains on pumping equipment; reduces rod fatigue, prolonging life of the rods; prolongs life of wire line, rig, and machinery by reducing shock while pumping or drilling; makes for longer life of belt and permits drilling to be accomplished more rapidly; makes drilling and cleaning out well much easier with a gas engine. The device always adjusts itself to the downward jerk and upward pull.

DIESEL ENGINE ADOPTED FOR DRIVING ARC WELDER

A new diesel engine, which differs radically from the popular conception of this type of power, has been adopted for driving arc-welding generators by engineers of the Lincoln Electric Co., Cleveland, Ohio, in collaboration with diesel-engine manufacturers. Development of this engine brings the economy of diesel operation to all applications of welding requiring engine-driven arc-welding generators.



This new Lincoln welder, the manufacturer says, cuts fuel costs 33 per cent to 86 per cent, depending upon the price of fuel oil used. For instance, at full-load operation it uses only 1.5 gallons of fuel oil per hour. In many cases, total savings including such items as transportation of fuel, loss, etc., are said to be as high as 40 cents per hour.

Maximum efficiency and service economy are assured by a new diesel principle embodying patented combustion-chambers. By accelerating turbulence of the fuel and air mixture, this scientific device affords more complete combustion, increasing efficiency and minimizing smoke and noise.

CLASSIFIED ADVERTISING

Patent Attorneys

JACK A. SCHLEY
PATENT LAWYER

Patents obtained — infringement practice in all Courts—oil field experience. 1807-11 Tower Petroleum Bldg., Dallas. 2014 Second Nat'l. Bank Bldg., Houston. 707 Insurance Building, San Antonio. 433 Munsey Building, Washington, D. C. Address any of these offices.

PATENTS — TRADE MARKS

All cases submitted given personal attention by members of the firm. *Form "Evidence of Conception" and instructions "How to Establish Your Rights"—Free*

LANCASTER, ALLWINE & ROMMEL
Patent Law Offices
418 Bowen Bldg. Washington, D. C.

For Sale—Maps

1938 REVISED EDITION

MAP of State of Texas, Eastern N. M., parts of Southern Okla., SW Ark. and La., shows Oil and Gas Fields in color, Counties, County Seats, elevations, coordinated alphabetical index of counties and fields Price $1.00 postpaid

Write for descriptive folder of Oilfield and County Ownership Maps.

ZINGERY OIL MAP COMPANY
Fair Building Fort Worth

Leases and Drilling Blocks

QUICK action wanted on McCloskey well on seismograph structure in No. 1 location Illinois Basin for percentage of acreage. Address Box J-310, The Oil and Gas Journal, Tulsa, Oklahoma.

TEXAS owner holds block of land on structure in Hudspath County close to New Mexico line, surrounded by land owned in Fee by Major Oil Companies. Oil and gas pipe lines near. Two wells now drilling in this county. Will sell part up to 5,000 acres in Fee at $5.00 per acre. For complete information including names of adjoining owners—address J. M. Kendrick, 4004 Lark St., San Diego, Calif.

PARTY desires to sell stock and interest in oil producing acreage in San Juan Co., New Mexico. Address Box J-323, The Oil and Gas Journal, Tulsa, Oklahoma.

LEASES—ROYALTIES near Ordovician wildcat semi-proven offers reasonable chance play safe quick money. E. CROFT, PROCTOR, TEXAS.

ATTENTION

Let us help you sell your lease or royalty. Oil Property Advertising Sales Co., Box 2603, Tulsa, Oklahoma.

WE HAVE for sale 4 oil wells producing approximately 18 barrels per day from a 2100' horizon. We have a gas well furnishing fuel for pumping three of these wells. Equipment all in A-1 condition. For further details see either J. E. Gillespie of Moline, or write C. H. Collins, Herington, Kansas.

FOR SALE — One hundred or more acres, with gas well and some oil, shallow production. Price reasonable for some party who will drill additional wells. Address Box 1098, Shawnee, Oklahoma.

DO YOU WANT PRODUCTION?
I am ready to drill a Bartlesville shallow well, production on the adjoining acreage, also on the diagonal acreage. Will sell one half interest in the well drilled through the sand on a 160 acre lease for $1600.00. Wells come in for from 50 to 100 bbls., 20 to 30 feet of pay, depth about 750 feet. Address Box 44, Wellington, Kansas.

SECURITY ABSTRACT COMPANY
El Dorado, Arkansas
Fee, Lease & Mineral Ownership on short notice. Ownership maps.

A "Complete" service on developments Texas Panhandle Field. Reasonable Monthly rates, one or all Counties. Dwight Well Log Service, Rule Bldg., Amarillo, Texas.

Leases and Drilling Blocks

I OWN 3,000 acres free in N. Pittsburg & Atoka Cos., Okla. 40 to 1000 A. tracts, no trades. Cash sale, lease or royalty. $5 to $25 per A. Townsite on 2 RRs. near production. J. E. Cavanagh, Baker, Ore.

New Mexico OIL LEASES WHOLESALE
40 acres at a time.
Roy G. Barton, Clovis, New Mexico.

FOR
SOUTH GEORGIA
Oil Leases and Royalties
Write
C. W. DEMING, Registered Dealer
Hinson Building, Waycross, Georgia.

ILLINOIS, INDIANA and TENNESSEE, drilling blocks, near drilling activity, or in semi-proven territory. Liberal offer for tests. Will sell some small scattered acreage, in Coles and Edgar Counties, Ills. Sam J. Burkitt, Noweaqua, Illinois.

LEASES and Royalties. Drilling Blocks. Illinois Basin. Write Elton Beck, Herrick, Illinois.

5,000 ACRES leases Webster County, Kentucky, scattered among Carter, Gulf, Tide Water and other major company holdings. 10-year term, 25 cent delay rentals, all recorded. Prices reasonable. Deep test just started. No trades. Write, P. O. Box 19, Owensboro, Kentucky.

FOR SALE OR LEASE
(IN FEE)

Have approximately 190 acres 34 miles from Houston in Liberty County on main concrete highway —property line some 4,000 feet from best well in established 30 well (Esperson Dome) field. Closest well said to be best in field. Another proven field 4½ miles north and in line. This acreage shown on maps as leased but is error. Carries ⅛ mineral rights (1/64 Royalty).

Good farm land—3 sets improvements.

WILL SELL IN FEE $100.00 ACRE—WILL LEASE FOR $40.00 PER ACRE. A GOOD OPPORTUNITY FOR A LOW PRICED PLAY.
T. Page Rogers, Houston, Tex.
1305 Prairie Ave.

TELL ME your wants in drilling blocks, leases, production in North Louisiana. G. Lucas, 124 Milam Street, Shreveport, La.

NEW MEXICO Oil Leases for sale, Wholesale. Inquiries invited. Write, Box 507, Las Vegas, New Mexico.

Leases and Drilling Blocks

LEASES, Royalties and drilling blocks throughout present hot play southern Arkansas. El Dorado Oil Exchange, Garrett Hotel Building, El Dorado, Arkansas.

FOUR 80's in shallow area, semi-proven, on trend from 200 bbl. well at 982, 41 gravity. Will sell for $10.00 A., half cash, half oil. L. D. Wise, Geologist, 912 S. 2nd St., Lawton, Oklahoma.

6500 ACRES New Mexico block, fully geologized, with well partially drilled, complete with equipment and casing. Must handle to settle estate. Also 3500 acre drilling block in Huerfano County, Colo. on Alamo Structure near test well now drilling. Also smaller leases on Alamo. C. H. Radford, Box 614, Pueblo, Colo.

Ranches and Farm Lands

400,000 ACRES of ranch Land sold in Southwest Colorado the last three months, is evidence, the producing Stock business is coming back. Write for choice Stock ranches at $2.50 per acre. Land with Gold mines, milk and honey. Wm. M. Haver, 2832 East Elm St., Wichita, Kansas.

Incorporations

DELAWARE CHARTERS: Complete service $35. Submitted forms. Chas. G. Guyer, Inc., Wilmington, Delaware.

CHARTERS — Delaware best, quickest, cheapest, more liberal. Free forms. Colonial Charter Co., Wilmington. Del.

Survey Service

THE DOWSING METHOD for locating oil structures, faults, and treacherous areas, operates on the principal of vibratory response to emanations from petroliferous sub-strata. Our WATSON No. 2, pioneer well of the Wilmington, Calif., field was located by this method and all my personally owned production. 15 years experience. This physico method may solve all your structural difficulties. Geo. Miller, 1548 Post Ave., Torrance, Calif. Ph. 983.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

Mailing Lists

COVERING every branch of oil industry. Write your needs. Oil Industry Mailing List Co., 909 Tulsa Loan Bldg., Tulsa, Oklahoma.

For Sale—Equipment

USED EQUIPMENT

Offered subject to prior sale and to price change without notice.

STEEL TOOL HOUSE

Used Steel Tool House in good condition. Size: 6-ft. x 6-ft. x 10-ft. Single door. No built-ins. Price: $160 f.o.b. Oklahoma City. Ph.: 7-2725 or LD-785.

SPANG DRILLING JARS

(Two Sets) 5½-inch Spang Weldless Drilling Jars. 3¾-inch Joints. Excellent condition with 15-inch stroke. Price each set: $125 f.o.b. Wichita. Ph.: 2-1431 or LD-59.

BLOW-OUT PREVENTER

9⅝-inch O.D. by 3½-inch O.D. Drill Pipe Autolock Hinged and Latched Packing Assembly complete for 3½-inch Baash-Ross Blow-out Preventer. Good serviceable condition. Price: $75 f.o.b. Oklahoma City. Ph.: 7-2725 or LD-785.

BOILER FEED PUMP UNIT

Complete Boiler Feed or General Service Unit mounted on steel skid base with the following equipment: (Two) 7"x3"x8" Worthington Pumps, equipped with Kibele Pistons; (One) 3-K.W. Frost Vertical Electric Generator; (One) 2-inch Inferno Boiler Firing Control; Steam Lubricator and other related equipment. Equipment is all in first class condition. This is an efficient, compact Unit, easily moved and inexpensive to install. Price: $800 f.o.b. Odessa. Phone: 683 and 684.

MUD PUMPS

(Two) 12-in. x 6¾-in. x 16-in. Type F, Johnston Gumbo Buster Slush Pumps mounted on steel skids with 8-in. Suctions make-up. These pumps are in first class condition having been completely overhauled in our Wichita, Kans., shops. Price each: $800 f.o.b. Corpus Christi. Ph.: 574 or LD-31.

SAND REEL

O.C.S. "Pup" Chain Driven Sand Reel complete with double brake drums. Good as new. Attractive price. Also a completely overhauled Parkersburg Model L 36-inch Chain Driven Sand Reel at cheap price. Both at Wichita. Ph.: 2-1431 or LD-59.

OIL AND GAS SEPARATOR

5-ft. x 16-ft. 150-lb. W.P. National, Type B-1H, Style No. H-521 Oil and Gas Separator complete with pop valve and other valves and connections. Designed to handle 40 million cu. ft. of natural gas and 40 thousand barrels of crude oil in 24 hours. In good operating condition. Price: $750 f.o.b. Pampa. Ph.: 884.

BUTLER AUTOMATIC TUBING SPIDER

4-inch, Butler Automatic Tubing Spider 80% as good as new. Price, complete with good slips: $150 f.o.b. Oklahoma City. Ph.: 7-2725 or LD-785.

GRIEF STEM

6-inch by 38-feet long overall square Kelly. 3½-in. bore with 6⅝-in. A.P.I. Connections. Good condition. Price: $175 f.o.b. Pampa. Ph.: 884.

ROTARY TABLE

20-inch, 10-A, Ideal Roller Bearing Rotary Table with Master Drive Bushings, mounted on steel skids. Completely reconditioned and guaranteed to be A-1 condition. Price: $800 f.o.b. Wichita Falls. Ph.: 2-2106 or LD-84.

THE BRIDGEPORT MACHINE COMPANY
Wichita, Kansas, and Branches.

CLASSIFIED DISPLAY RATES

Classified Display is set with a border and may be used in one or two column sizes.

1 Inch	*1 time*	*$5.00*
1 Inch	*13 times*	*4.50 per inch*
1 Inch	*26 times*	*4.00 per inch*
1 Inch	*52 times*	*3.50 per inch*

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

CLASSIFIED

Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgement is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times		1 time	2 times	3 times	4 times
3 Lines	*$1.05*	*$1.80*	*$2.55*	*$3.30*	*7 Lines*	*$2.45*	*$4.20*	*$5.95*	*$7.70*
4 Lines	*1.40*	*2.40*	*3.40*	*4.40*	*8 Lines*	*2.80*	*4.80*	*6.80*	*8.80*
5 Lines	*1.75*	*3.00*	*4.25*	*5.50*	*9 Lines*	*3.15*	*5.40*	*7.65*	*9.90*
6 Lines	*2.10*	*3.60*	*5.10*	*6.60*	*10 Lines*	*3.50*	*6.00*	*8.50*	*11.00*

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma